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ABSTRACT

"Volunteers Teaching Children" describes the Volunteer-led Investigations in Neighborhood Ecology, or VINE Programs, established by Denver Audubon Society members as an urban education project, and how that model has been adapted to draw on the human and financial resources available in other cities. VINE Programs give children opportunities to discover and investigate the plants, animals, and ecological relationships that exist right in their own neighborhoods through hands-on natural science investigations. The activities teach observation and critical thinking, communication, and cooperative group skills. The programs are delivered by volunteers to schools and institutions where children go after school and on Saturdays such as libraries and community centers. This book begins with an overview of VINE Programs and covers such topics as "Starting with a Think Tank"; "Conducting a Needs Assessment"; "Designing the Project and Defining the Objectives"; "Selecting Appropriate Learning Activities"; "Selecting Pilot Test Sites and Gaining Their Participation"; "Recruiting and Training Volunteers"; "Assembling Materials and Supplies"; "Conducting the Pilot Test and Evaluating the Results"; "Expanding the Project to Reach More Children"; "Getting Financial Backing"; and "Establishing a Fee Structure." The Program-Planning Appendix contains instructions for program-planning workshops and sample materials. Other appendices include sample budgets and forms, and suggestions for materials preparation and kits. (PVD)

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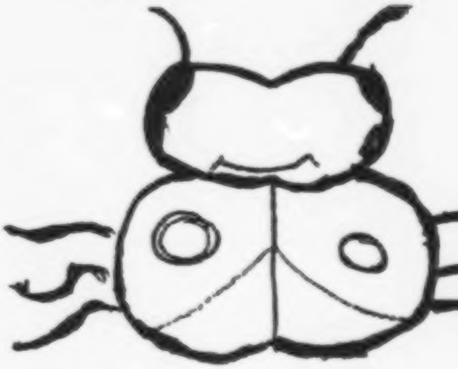
Volunteers Teaching Children



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A GUIDE FOR ESTABLISHING VINE ECOLOGY EDUCATION PROGRAMS

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Karen S. Hollweg

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Volunteers Teaching Children

A Guide for Establishing VINE Ecology Education Programs

Karen S. Hollweg

NAAEE
NORTH AMERICAN ASSOCIATION FOR ENVIRONMENTAL EDUCATION
North American Association for Environmental Education
P.O. Box 400, Troy, Ohio 45373, USA

Volunteers Teaching Children: A Guide for Establishing VINE Ecology Education Programs is based on the experience of Denver Audubon Society in establishing its Urban Education Project and the subsequent experiences of people in seven other cities as they established similar programs.

The coordinators and directors of these local programs interact through the North American Association for Environmental Education's **VINE Network**. (VINE stands for **V**olunteer-led **I**nvestigations of **N**eighborhood **E**cology.) We welcome your participation.

For additional information about the VINE Network and/or information about videos, printed documents, other materials and personal assistance available to support your volunteer-led ecology education program, please contact

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During the years that I've worked on the projects described in this publication, I've repeatedly thought of the old saying "None of us is as smart as all of us". I've learned much from the volunteers and staff who have made Denver's project so successful and from the leaders who have established similar projects around the country. And in the process, I've met and come to know many wonderful people. To all of them I extend my sincere thanks for their efforts on behalf of education, their camaraderie, and their contributions to this document. The people listed below have made some of the largest contributions to this joint effort:

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Karen Hollweg
Denver Audubon Society's Urban Education Project Director, 1984-88 and Dissemination Grant Director, 1988-92
NAAEE's VINE *Programs Outreach Director*, 1993-1995

"In this program we learn not in a boring way, but in an exciting way. You're not sitting dead on a log, you're out there doing things with your hands. You're finding new things you've never seen before... I like being able to have fun and learn at the same time."

—a 4th grade participant

Preface

This edition of *Volunteers Teaching Children* marks the first revision and reprinting since the VINE Program became affiliated with the North American Association for Environmental Education. The evolution of VINE, from its beginning in Denver in 1984 to its present status as a priority program of an organization with members throughout North America and round the world, comes as a natural response to the growing recognition by many educators, policy-makers, and funders that more environmental education must be provided in urban settings.

Volunteers Teaching Children describes how Denver Audubon Society members established their Urban Education Project and how that model has been adapted to draw on the human and financial resources available in many other cities. Community-minded volunteers began the first program, but involved parents and teenagers interested in community service have been equally successful in starting similar programs in other places. In every case, VINE has been built on a strong foundation of community-based assessment and input. It truly is a program that has been developed at the local level to meet local needs.

Volunteer-led **I**nvestigations of **N**eighborhood **E**cology, VINE Programs, are sponsored by nature and science centers, Boys & Girls Clubs, school systems ... a variety of organizations and institutions committed to the education of children growing up in our cities. VINE Programs range in size from those that reach less than a hundred to those reaching more than 1,500 participants each year. Each of these programs:

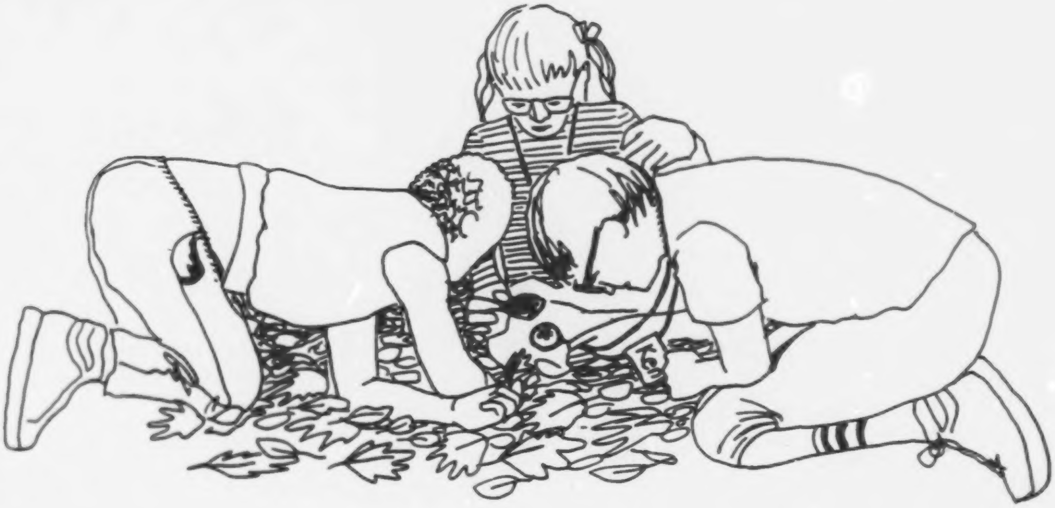
- engages participants in discovering plants, animals and ecological relationships that they've never before noticed;
- develops skills for observing, communicating, investigating, and thinking critically about the environment; and
- provides opportunities for small groups to work together over weeks or months.

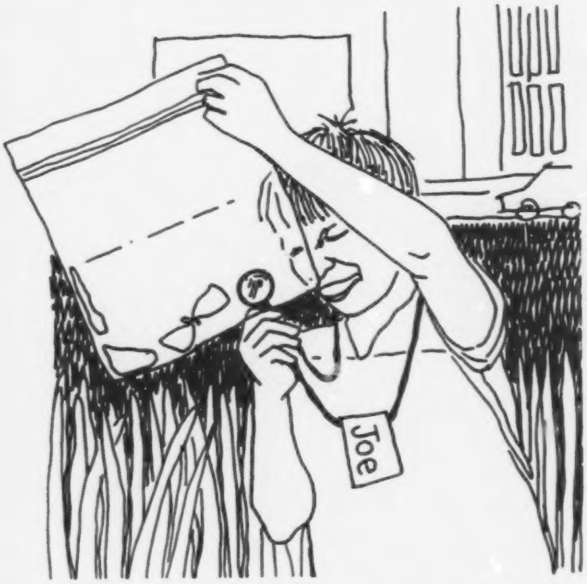
Outside evaluators have found that VINE Programs "illustrate well many characteristics of the nation's education 'reform agenda' (e.g., cooperative learning, peer teaching, inquiry-learning, use of the local environment)." They further concluded that VINE:

- provides city children with outdoor neighborhood experiences that would not have been available otherwise;
- influences teachers to change their teaching and/or curriculum by providing a model for using hands-on activities; and
- changes youngsters' views about learning, the life sciences, and their everyday environment.

We hope this volume will inspire you and prove to be a useful reference as you build a VINE Program that's right for your area. We'll be eager to hear from you and to lend a hand if we can.

Kathy McGlauflin, *President*
North American Association for Environmental Education

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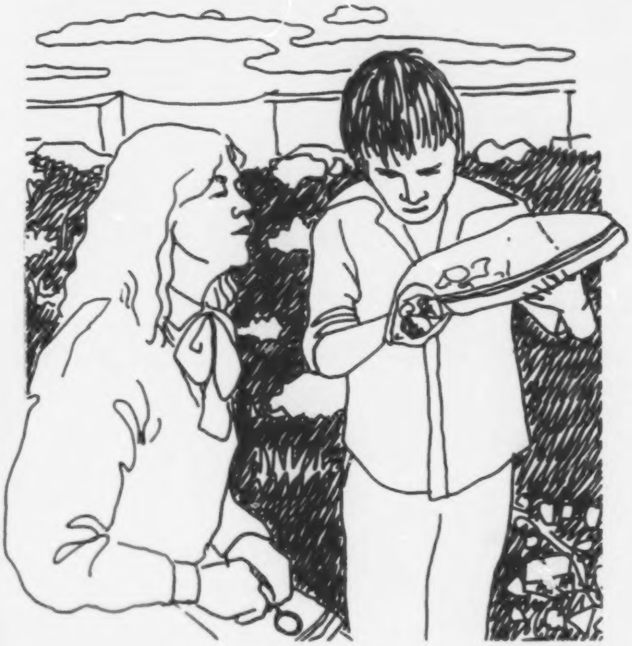


Overview

Volunteer-led **I**nvestigations in **N**eighborhood **E**cology, VINE Programs, in Denver and other cities, give children opportunities to discover and to investigate the plants, animals and ecological relationships that exist right in their own neighborhoods.

What do VINE Programs look like in action?

Picture groups of nine and ten year-olds on their hands and knees carefully combing through piles of leaves. Concentrating intensely, they begin discovering slugs, beetles, spiders and exclaim with amazement: "Wow, look at this one!" "Quick, catch it!" "I found a tiny orange one." Spontaneous giggles of delight and cheers expressing the thrill of discovery punctuate the activity. The enthusiasm and excitement of the children are so contagious that the volunteer leaders smile and laugh too. A volunteer steers one pair to a new habitat, suggesting "Why don't you see if you can find some critters over in that sunny spot."

When one girl's magnifying lens focuses on the front part of an unusual insect, she screams with astonishment, "It's got a **head** ... and a **nose**!" Two boys run over to their friends to show them the delicate bug with the red legs they have found. A child asks her partner to put another ant in their observation sack because the first one has disappeared. "Do spiders eat ants?? ... Hey, look, it does!"

As the activity proceeds, each group of six youngsters comes together and compares the animals found. Each group's volunteer leader initiates a discussion of which ones were found among moist leaves, which ones came from drier leaf piles, and how they differ. Finally, the children return all the animals to their original habitats. As the groups go back into the building, the youngsters eagerly ask, "When are you coming back?"

Who do they reach?

A socio-economic cross section of children participate in each city. About 50 percent are from families living at or below poverty level, and about 55 percent are from racial and cultural minorities (primarily African American and Hispanic). In response to a Denver survey, over 80 percent of the parents, teachers and youth leaders said that their children had new experiences with this program ... learning opportunities they wouldn't have had otherwise.

What do the children learn?

Through hands-on, natural science investigations, participating children have opportunities to find and observe a variety of plants and animals, to look at them closely with a magnifying lens, to sort them and analyze their similarities and differences, to discover ecological interrelationships and figure out how people affect them, to share their discoveries and wonder about the unknown. Investigations may center on things as diverse as flowers, pillbugs and birds and vary from one season to the next. The children learn that nature is everywhere — that the vacant lot, the trees in the yard, and the leaves on the playground have wild things living in them.

The activities teach observation and critical thinking, communication, and cooperative group skills—skills that are important for everyone to learn.

How are VINE Programs unique?

The programs are delivered by volunteers to schools and to places children go after school and on Saturdays, such as community centers, libraries, Boys and Girls Clubs. No nature center or natural area is required, so there are no major capital expenses. The children discover a new world right in their own neighborhood and find that they can use their newly learned skills to continue discovering on their own.

How do the programs affect the community?

Personnel at **sites** that host the program say it has enabled them to expand and enhance their program offerings. Teachers find that the activities enrich their science curriculum with hands-on, outdoor laboratory experiences which they haven't been able to offer previously.

The programs give **citizen-volunteers** opportunities to interact with a younger generation, gain first-hand experiences in schools and agencies for youth, and serve their community. They increase the **children's** awareness of and fascination and respect for the plants and animals living wild in their immediate environment. For the **sponsoring organizations**, these are constructive community-outreach programs that can bring positive recognition.

What is needed to begin?

A program could be started with $40 to $50 and as few as four or five volunteers each investing 10 to 12 hours of volunteer time. At this scale, 25 to 30 children could be involved in several activities over several weeks.

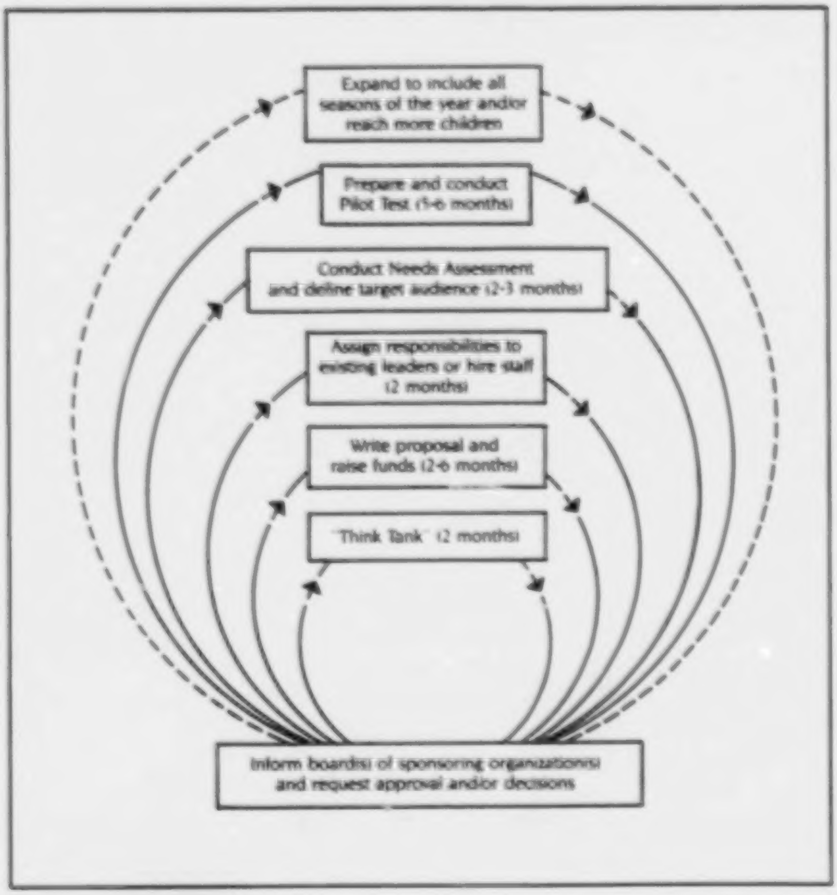
Our experience shows that the program lends itself to various sizes depending on the financial and human resources at hand. In 1985, Denver launched its first season with 250 children through the efforts of 60 volunteers (only 29 of those actually worked with the kids). By 1987, the program involved about 2,000 children and 200 volunteers annually. Two part-time, paid staff members served as project coordinators and fund-raisers. We recommend that new cities start with at least a 1/2-time project coordinator.

As Denver Audubon began its Urban Education Project, the Board and steering committee were very wise in admonishing us to "start small." We now pass that advice on to you.

How have local organizations started VINE Programs?

The following chapters document the processes used in starting Denver's project. That project grew from an idea in a few people's heads to a fully developed year-round program in 3 years. The diagram on page 9 outlines the phases of development and the approximate length of time needed to accomplish each "round".

From 1988 through 1991, a National Science Foundation grant enabled Denver Audubon to work with groups in seven other cities and help them start similar projects. Each project's design is unique and takes advantage of resources available locally. This publication highlights, in a gray box at the end of each chapter, lessons learned from our collective 1988-1991 efforts. We have tried to give potential sponsors of similar projects enough details regarding the initiation, content and organization of the projects in all 8 cities that they will be able to learn from our experiences. Our hope is that your community will be able to adapt this model to your situation, start a program that suits your local needs, and provide children with similar active, meaningful learning experiences.


Expand to include all seasons of the year and/or reach more children
Prepare and conduct Pilot Test (1-6 months)
Conduct Needs Assessment and define target audience (2-3 months)
Assign responsibilities to existing leaders or hire staff (2 months)
Write proposal and raise funds (2-6 months)
"Think Tank" (2 months)
Inform board(s) of sponsoring organization(s) and request approval and/or decisions

Starting with a Think Tank

- **To develop the interest, thinking and participation of educators and organizational leaders.**
- **To enable a consensus to emerge regarding the purpose, direction and start-up of the project.**

During the 1980's, Denver Audubon Society's Board of Directors and officers had been talking about an Urban Environmental Education Project. To get beyond the talking stage and coalesce a group around a more defined project, the Education Chair planned a "Think Tank".

He invited a group of 18 people to a meeting in his home. All participants were involved in education professionally or as an avocation. Ten were active Denver Audubon (DAS) members (6 served on the Board of

Directors, 4 chaired various DAS education projects), and 8 were guests from colleges, environmental centers, public and private educational institutions. Everyone shared an interest in helping launch the project.

The meeting's agenda listed the questions to be addressed: what programs already exist, what needs exist, what are the objectives for the project, who should it serve, what should it look like. The ideas, butcher paper, and marker pens flowed as the brainstorming and decision making process proceeded.

As happens with such group planning processes, there were times when the discussion lost its focus or got bogged down, but comments like "Onward through the Fog!" were heard. And when the Chair and a small group of 3 others got together to review the results, compile a written summary and plan the next meeting, they found much had been accomplished.

The group had reached consensus in several major areas.

The scope of the curriculum: There should be a progression from awareness of living things and their natural history to ecological interrelationships and man's actions that effect ecosystems.

Who should be served: We should "teach children by teaching adults." The core of the program should be volunteer "lay naturalists" who would be trained at DAS sponsored workshops. The program would be limited to people in the Denver metropolitan area.

Where and how should the lessons occur: The program must proceed "without walls." (We had no nature center nor the ability to establish one.) Younger children must have "hands-on lessons to acquaint them with nature as something to be both loved and enjoyed." **Many** environmental curricula are already available but are not being used—we must use them.

Concerns and pitfalls to avoid: Don't duplicate existing programs or impose programs where there is no need or community/user acceptance. Make sure there's adequate support from sponsoring organization(s) and from the community at large and that funding is adequate. Don't start too soon or too big. Thoroughly test the program in a pilot stage.

Who should be in charge: A job description for a "helmsperson" must be agreed upon soon, and that person (probably in a paid capacity) should be recruited.

A report of these consensus items was sent to all participants in preparation for an evening meeting the following month. At that session, plans for the first year were made with major tasks and schedules broken out for two six-month phases.

Phase I: Further refinement of the Needs Assessment and Market Analysis, a review of existing and available curricula, travel to and coordination with other successful environmental education programs, and initial contact in the Greater Denver Metropolitan Area with identified user groups.

Phase II: Conduct a pilot Lay Naturalist Training Program. This program would be designed to train up to 20 docents or Lay Naturalists.

Following the completion of the pilot program, an evaluation by DAS would occur and a report filed with our funding agencies no later than May 1, 1985.

The DAS "Think Tank" Planning Group decided that they wanted to develop a new program that would grow to be sizable in its impact and scope. It was this conviction and the fact that one person had connections to potential major donors that led to the decision to **hire** a "helmsperson." They acquired two substantial grants from private sources. Then they hired someone with extensive curriculum and program development experience as a full-time Project Director (job description in Appendix, page A3). We hope you'll be able to use a lot of the methodologies and materials she has developed so that our investment benefits you. By using the materials and information in this document, you shouldn't have to invest as much time, energy and money as we did.

While some funds are essential for getting this kind of project started, we believe costs could be kept to a minimum if a volunteer "helmsperson" were identified, committee members and/or other volunteers had the time to carry out Phases I and II themselves, and an institution with office space, office machines, and the like were willing to provide a home-base for the project.

Summary

In getting the project started, we found three elements essential:

- **involve many decision-makers and enthusiasts in initial planning meetings.** By gaining the participation of the leaders of sponsoring organization(s), educators, and potential funders, we benefitted from their good ideas and set the stage for their future involvement. Out of our "Think Tank" group came the Education Committee of eight that proceeded to nurture the planned project. Board Members who were informed supporters, our premier fund-raiser, and donors and supporters who hold key positions in related institutions.
- **commit plans in writing and get everyone's endorsement of the written planning document.** An agreed upon plan enabled our whole group to know where it was headed and to move in the same direction.
- **identify leaders and establish responsibilities.** No matter whether the leaders are paid staff or volunteers, the group needs to agree on who does what and when. Successes in our volunteer organization depend on a team approach. The type of expertise and amount of time each member can contribute varies. I may have more time to work on the project this month and no time at all next month — I may be good at making phone calls, yet terrible at writing. We've found that the function of "coordinator" is a major responsibility and that asking people to make a commitment and to honor that commitment is essential.

Charting Locally Appropriate Adaptations

Programs similar to Denver's were started in 1988-89 in seven cities across the country. Because these new programs grew out of Denver Audubon's experiences as described here, they didn't have to start from scratch. They **did**, however, **start with a workshop** that functioned similarly to Denver's "Think Tank". Each workshop (of about five hours) involved leaders from a variety of institutions interested in sponsoring or fostering this type of project*. These leaders worked together to (1) become familiar with Denver's project—it's philosophy, objectives, organization, key components, and financing, (2) assess the environmental education programs that already reach local children and decide whether there was a niche that needed to be/could be filled by this type of program, and (3) if a need did exist, decide whether it was feasible/realistic to proceed, where financial and institutional support could be garnered, who would take the lead, and how to proceed. This starting point was critical to the success of many programs because it enabled partnerships to form. These initial alliances have made it easier for project coordinators to get people in other institutions/organizations to support local projects (by, for example, providing avenues for publicizing the project, offering art production resources, and/or helping select activities) and to gain all sorts of in-kind contributions (from the printing of brochures to rent-free office or storage space).

The three elements that were essential in getting Denver's program started (listed above) also proved to be important in the seven new cities. Problems arose when the sponsoring organization's Board and/or CEO (top staff person) didn't know about and have authority in controlling basic decisions. And even greater problems arose when new top staff people were hired who did not have a commitment to the continuation and/or success of the program. Staff changes have gone most smoothly in cities where a broad base of support for the program exists among the Board, volunteers and staff members of the sponsoring institution(s) and is bolstered by community support and recognition of the program. So, our advice is to be sure to take the time to build and maintain the enthusiastic and formal support of many decision-makers.

Denver's experience regarding strong leadership and a team approach has also proven true in the new cities. They've all found that one person needs to take the lead, with two to five others (who firmly believe in and have time to commit to the program) to help out. This team can share the load, work through rough spots and celebrate successes together.

Nation-wide Networking

The notion of helping each other and sharing ideas has worked at a national level too. Through the support of the National Science Foundation, Denver staff helped the seven new cities learn from their experiences, and all eight cities have worked together and exchanged ideas. We will continue to seek funding to support local efforts to start programs like ours ... so, **please contact us**. We will look forward to learning about your initiatives and will help to the extent that we can. If you can, please make arrangements to visit a project that's conveniently located for you. Project leaders from Seattle and Ft. Lauderdale visited the Denver project early on, and found their visits very useful.

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* See the **Program Planning Appendices** following page 70 for our recommendations on preparing for and conducting a program planning workshop.

Conducting a Needs Assessment

- **To determine whether there's a need for such a program in the community and, if so, for what age group and through what institution(s).**
- **To determine the potential for volunteers and financial support.**

In the early 1970's, nationally-funded elementary science curricula (such as SCIS, *Science Curriculum Improvement Study*) were produced and widely implemented in an effort to provide youngsters with hands- on activities to learn about plants, animals and their interrelationships. By 1978, Stake and Easley, in *The Status of Pre-College Science, Mathematics and Social Studies Educational Practices in U.S. Schools*, found that public schools appeared "to be moving away from science education" and that "reading about science" was frequently considered as science instruction in elementary schools. In the early 80's, groups like the National Science Board Commission and the Carnegie Forum continued to document deficiencies in science teaching and pointed to the need for learning experiences in the natural world that were meaningful and relevant.

Our intuition told us that these nation-wide trends existed in Denver too, which led us to conduct an assessment of our area's needs in nature/ecology education. This was an essential step because it provided us with the data necessary to build a strong rationale, which helped in recruiting volunteers and participants and in raising funds to sustain our efforts.

Data were gathered (1) from educators and adults in charge of agencies for children, and (2) from Denver Audubon Members (re potential volunteers and donations.)

Assessing the Needs of Children and Sites that Serve Them

The first part of our data gathering process included:

- personal interviews with 19 science supervisors/curriculum coordinators, principals, and teachers in the seven major school districts that serve approximately 241,000 of the 262,500 students in metropolitan Denver;
- on-site observations of children's education programs sponsored by the city's two museums, zoo and botanical gardens and extensive interviews with the education directors of those four facilities;
- phone and/or personal interviews with ten adults in charge of outdoor education programs at nine different public and private day camps, recreation centers and parks in the suburbs; and

- personal interviews with 14 educators, program directors and administrators at 11 inner-city agencies/institutions where youngsters spend their non-school time (including community centers, libraries, and extended day-care centers.)

Needs Assessment - Interview Protocol
for Public Schools

1. Introduce self and purpose of needs assessment (to identify existing programs and determine niches we might help fill without duplicating or competing)

2. What environmental/nature/ecology courses or programs do you offer? For each, note: educational philosophy, program content, student activities, age/grade of students, numbers involved, staff, child:staff ratio, where learning takes place, time and duration, fee (if any).

3. Other programs offered in the past? Why discontinued?

4. Future plans

5. Needs you perceive or "holes" that you will NOT be addressing

6. Describe DAS project ideas under consideration.
What advice do you have for us regarding the value of such programs for your children? ... best times, format, ages?

7. What volunteer opportunities do you have for adults?
(... nature of activities, level of responsibility, number and source of volunteers, training and management)

8. Any other ideas/advice for us regarding our new project?

Note: For interviews with all non school agencies and institutions, we asked two additional questions:

- What population do you serve? (ages; racial, cultural, socio-economic make-up; total number; how they're enrolled or attracted)
- What is your purview and the scope of your programs?

The interviews were conducted by the Project Director and by volunteers, once the Education Committee and Project Director had agreed on an interview protocol. Most of the people interviewed were suggested by "Think Tank" participants or were located using the telephone book. City Hall and social service agencies also helped point us in the right direction.

The collected data are summarized in Tables 1 and 2.

TABLE 1.

NEEDS ASSESSMENT - SUMMARY OF DATA FROM PUBLIC SCHOOL DISTRICTS

Denver Metropolitan Area School Districts	Elementary Science Curriculum			Outdoor Education Experience In Mountains With Strong Science Component (Duration)	Comments
	Based on Adopted Textbook(s)	Hands-On Activity-Based Curriculum	Spotty Implementation		
1	Silver Burdett Scott Foresman		x	each 3rd grader (1/2 day) half of 5th graders (overnight)	science gets slighted - little to no time or money for it
2	Harcourt Brace		x	each 6th grader (3-4 days)	lots of elementary teachers don't teach science
3		Elem. Sci. Study (ESS) Sci. Curric. Imp. Study (SCIS)		each 6th grader (1 week)	district-mandated curriculum supported at all levels
4			x	"Almost all upper elementary students do some-things outdoors."	revising curriculum
5			x	No	revising curriculum
6			x	3/4 of 6th graders (1 week)	revising curriculum
7	Addison-Wesley			No	basic skills have always been important

* "Spotty Implementation" means some teachers teach science for 15 to 30 minutes per day, others do not teach science at all; some principals encourage and support the teaching of science, others do not.

TABLE 2.

NEEDS ASSESSMENT - SUMMARY OF DATA FROM NON-FORMAL INSTITUTIONS

Non-Formal Institutions (Total Number Interviewed)	Hands-On Science Activities Part of Regular Instruction	Camping Trips (Primarily to the Mountains)	Education Activities at Natural Areas	Free-Play and/or Other Non-Science Activities Occur Outdoors	Expressed Need For More Hands-On Science Experiences	Comments
Museums, Zoo, Botanical Garden (6)	100%*	0%	0%	0%	100% - especially for middle and lower socio-economic levels	Programs occur within the sponsoring facility. Primarily for members. Parents must register and provide transportation to workshops. Parents are in upper income levels and highly educated.
Suburban Non-Formal Programs (9)	0%	44%	44%	33%	56%	State Parks and Open Space programs provide interpretive activities at their natural areas.
Inner-City Non-Formal Agencies/ Institutions (11)	9%	9%	0%	82%	100%	Had not previously thought of providing kids with opportunities to discover and investigate living things, but thought they'd love it.

*Data indicate percentage of institutions interviewed.

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In general, we found that Denver students have experiences similar to those described in the national studies and reviews. Programs specifically dealing with environmental education have been eliminated through budget cuts, and education regarding the natural environment and ecosystems is included in "science." About half of the students are in school districts which have adopted science textbooks to wholly or largely replace activity-based curricula and which slight or ignore learning in the natural environment. The only outdoor learning most students have is a very memorable, but brief, two to four day experience as 5th or 6th graders in a mountain environment.

The outdoor, hands-on learning provided by non-formal institutions in the Denver-metro area are offered at suburban parks and open spaces, and at the urban zoo, botanical garden, and museums. These programs are largely available to children whose parents are in upper income levels and seek out the experiences for their children. Eighty- three percent of those interviewed felt that more of these kinds of opportunities were needed for youngsters — especially youngsters of middle and lower socio-economic levels.

We did **not** find informal, hands-on education concerning the natural world delivered **in the outdoor environment frequented by and accessible to children on a daily basis** — either in the suburbs or the inner-city.

Assessing Volunteer and Donor Resources

The second part of our data-gathering process was a survey of a sample of our membership. We wanted to learn about the potential pool of financial contributors and of volunteers (i.e., how many people are willing to do what.) By enlisting the help of 12 members at a real estate office with 10 phone lines, we were able to speak with and get responses from 144 members (6% of our total membership) in one evening. (See page 18 for the phone script.)

For the first 500 names on our membership list, we were able to find 291 phone numbers in the phone book. The night we phoned, we were unable to reach about half (due to no answer, busy signals, etc.). In subsequent phone-a-thons, we've found that approximately the same proportions apply.

When we tallied our responses at the end of the evening, we learned (based on this sample of 500) that through phone calls we could get financial pledges from about 8% of our members and recruit another 10% as volunteers. Those volunteering were split fairly evenly between wanting to work with children and wanting to help out in other ways. Perhaps the most significant discovery we made was that, of the volunteers who wanted to work with kids, the majority were available after work or on Saturdays. If we were to use member-volunteers to deliver the program we'd need to arrange for them to work with children after work or on Saturdays; and if we wanted to deliver the program through schools we would need to find non-Audubon members to supplement our volunteer pool.

Summary

The needs assessment provided hard data that proved valuable in helping us to:

- focus our program planning to address the areas of greatest need,
- learn about the volunteer and donor resources within our organization; and,
- write convincing proposals, acquire grants, and gain support for our project.

As the programs in Louisville (KY) and Seattle (WA) were getting started, they also conducted needs assessments to check the validity of their initial plans with a larger number of people. By phoning members, Seattle Audubon found donors and volunteers. In Louisville, the museum-led coalition surveyed some teachers, principals and environmental-group leaders to learn their views. In other cities **additional methods** were used. For example, the Ft. Lauderdale (FL) folks met with the school-district's superintendent, a board member, and a science curriculum official to get their concurrence, suggestions and endorsement. They then attended a regular meeting of the elementary principals, described their plan and distributed "applications" (see the Appendices, page A33), asking principals interested in hosting such a program at their schools to complete and return them. (The number of responses indicated agreement on the need and real interest in furthering this concept.) The steering committee in Birmingham (AL) used a three minute slide show to introduce their ideas at the meetings of a few conservation organizations and assessed their interest in volunteering for a local program by counting the number of sign-ups they received.

In each case, the program organizers were able to collect additional data that enabled them to make more informed decisions and to enlarge the number of people who knew about and might support their plans. If you are considering reaching out to new audiences for your volunteers, funding, or sites to host the program, we suggest you **first "test the waters"** by talking with a sample of those you're considering, whether they be teens, corporations, recreation centers, or seniors. Getting their feedback early on will help you make more realistic plans and find good contacts who may help you succeed.

For numbers NOT reached, mark:
NA = no answer
BSY = busy
NG = number no good (e.g. disconnected, person no longer at that number, etc.)

ENVIRONMENTAL EDUCATION PROJECT PHONE SCRIPT
October 23, 1984

INTRODUCE YOURSELF & TELL WHY YOU'RE CALLING

Hello. is ________________ there please?
My name is ________________, & I'm calling for Denver Audubon Society.
I'd like to tell you about something new in our Audubon chapter, to learn what you think about it, & to ask for your support. Do you remember reading in the newlestter about our new Urban Environmental Education Program?

FIND OUT WHAT THEY KNOW ABOUT THE NEW PROGRAM & ESTABLISH RAPPORT

If YES,
listen to what they say:
WE'RE VERY EXCITED ABOUT IT & WE HOPE YOU CAN HELP IN MAKING IT A SUCCESS.

If NO,
hasn't read newsletter,
ARE YOU RECEIVING OUR NEWSLETTER?
If NO, check address & note errors.
EXPLAIN A FEW FACTS ABOUT THE PROGRAM.
(see Fact Sheet)

If antagonistic NO,
DO NOT ARGUE, RESPOND (see suggestions below),
THANK THEM FOR SUPPORTING AUDUBON & SAY GOODNIGHT.

...the only reason I'm a member is to get the magazine & I don't want to know about DAS programs.
Offer to NOTE "MAGAZINE SUBSCRIBER ONLY" on membership list.

... I've had too many Audubon fundraising phone calls. Will you take me off your list?
THIS IS THE FIRST TIME WE'VE PHONED OUR LOCAL MEMBERS, BUT YOU MAY HAVE BEEN CALLED BY THE NATIONAL HEADQUARTERS.
Offer to NOTE their REQUEST (i.e. NOT TO BE PHONED BY NATIONAL &/or LOCAL) on membership list.

ASK FOR THEIR PARTICIPATION IN THE PROGRAM

THERE ARE 3 WAYS YOU CAN CONTRIBUTE TO THE ENVIRONMENTAL EDUCATION PROGRAM. You can:

- volunteer your time (about 3-4 hours/month).
- share with us your expertise about a subject like herons or about a natural area like Barr Lake.
- make a financial contribution to keep the program going.

CAN YOU HELP US IN ONE OF THESE 3 WAYS?

If TIME,
In the spring we'll be conducting outdoor activities with Denver kids--so they can learn about the insects, birds & other living things in their neighborhoods. We will need volunteers to work directly with children & others to help behind the scenes. (All you need is a desire to share your love of nature with youngsters. We'll provide training & suggest activities.).

Would you like to

K - work directly with small groups of kids?

or

O - help in other ways? (e.g. preparing materials, scheduling groups)

Is the best time for you:

W - weekdays?
A - after work?
S - Saturdays?

*MARK ANSWERS ON MEMBERSHIP LIST

If EXPERTISE,
There are school groups & adults who have requested lay naturalists to lead a field trip to a natural area. For this part of our education program we need to have experts who are very familiar with specific natural areas or who know alot about a certain topic & are willing to teach others. (For example, we'd like to have experts who could lead a field trip to Chatfield's heron rookery, conduct a tour of the geological formations at Red Rocks, show folks the birds along the Platte Greenway or the butterflies along the Highline Canal........... There are numerous possibilities!)

What is your area of expertise or do you know someone who would be willing to share his/her knowledge with groups of people?

*FILL OUT A PINK EXPERT FORM.

If FINANCIAL CONTRIBUTION,
We have foundation grants to fund the first year of this program, but to keep the program running in the 2nd year we need $9,000 in contributions from members. Would you be able to contribute $25?

(If no, ... Then could you make a contribution of $10?)
We'll greatly appreciate any amount.

*NOTE AMOUNT OF PLEDGE ON MEMBERSHIP LIST.

I will be sending you a postage paid envelope.
(If they say they have one they just received in the mail, note "NO ENV." on membership list.)

If NO time or expertise,
I know these do take alot of time & you don't have time, but we're surveying members to find those that do have time.

Can you help us financially?
No gift is too small.

*NOTE AMOUNT OF PLEDGE ON MEMBERSHIP LIST.

I will be sending you a postage paid envelope. (If they say they have one they just received in the mail, note "NO ENV." on membership list.)

WRAP UP THE CALL

THANK YOU FOR
or VOLUNTEERING TO PARTICIPATE IN THE EDUCATION PROGRAM
PLEDGING A DONATION OF $______
(Review what you have written on the membership list or on pink form to confirm its accuracy.)

WE APPRECIATE YOUR SUPPORT OF THE EDUCATION PROJECT. IT WILL ENABLE US TO BUILD A PROGRAM THAT WILL SPARK A LOVE OF NATURE IN MANY KIDS & ADULTS. THANKS FOR TAKING THE TIME TO TALK WITH ME. I ENJOYED IT. GOOD NIGHT.

If no,
THANK YOU FOR TAKING THE TIME TO TALK WITH ME and FOR YOUR INTEREST IN DENVER AUDUBON SOCIETY.

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Designing the Project and Defining the Objectives

- **To describe a program which fills the need.**

Analysis of the Needs Assessment convinced us that the **children in the City and County of Denver** (the central part of the metropolitan area) had the greatest need for the program we envisioned. Central Denver youngsters from middle and lower income families did not have access to after-school programs that explored nature, and the professionals interviewed told us there was a tremendous need for such programs. The Denver Public Schools had switched to science textbooks, and the only opportunities for experiential outdoor learning for all students were two special programs in the mountains and foothills (1 day in third grade and 2 days in fifth grade.) We did not have a clear idea whether one grade level would be better than another, so for the time being, targeted the whole upper-elementary age range.

Since back-to-basics and computers were "in", we decided that training teachers to deliver outdoor hands-on activities would not lead to success in reaching our goal. Even the newly adopted textbook-based science curriculum was getting slighted. Adding another portion (responsibility) to the full plates that already made teachers feel overwhelmed would most likely not fill the need.

The Education Committee decided that Denver Audubon Society would mobilize and train our own volunteers to deliver outdoor investigative activities to children in schoolyards on weekdays and in neighborhood settings after-school and on Saturdays. By offering our services to both school and non-school sites, we could enable more of our volunteers to participate. Other **benefits of collaborating** with these institutions were that (1) we would **not have to expend energies recruiting and organizing children** and (2) we would **not have to make large capital outlays for transportation, land or facilities**. We could use the yards of our host sites and the vacant lots, alleys, and rights-of-way in their neighborhoods. (Initially we budgeted funds to reimburse volunteers for mileage traveled to get to their sites, but none requested that reimbursement. In addition to volunteering their time, they absorbed their own transportation costs.)

Objectives

With this direction set, the objectives readily fell into place.

The purpose of the Project became: to provide Denver's children with enjoyable neighborhood experiences that will heighten their awareness, expand their knowledge, and develop their respect for the plants and animals living in their urban world.

The children participating in this program will:

- explore their local natural environment, the plants and animals that live there, and the ecological interactions of those plants and animals.
- interact with adults who demonstrate interest in and share enthusiasm for investigating nature out-of-doors.
- develop the skills necessary to observe, use scientific tools, record, compare, quantify and analyze data, and apply critical thinking to reach conclusions. (The children are encouraged to apply these skills in other settings too.)

We would emphasize hands-on experiences, **not** facts and information.

Pilot Test

To see if this project design was workable, we planned a pilot test for February-May, 1985. By testing all parts of the project on a small scale for one season, we could identify and iron out any problems before going further. More specifically, we would:

- test procedures for recruiting and training **volunteers**.
- try out a sequence of outdoor **activities** in neighborhood settings in March, April, and May,
- compare the implementation and reception of activities and procedures at several **diverse sites** including schools, community centers, extended day care facilities, and libraries, on weekdays, after school, and Saturdays; and
- evaluate the reception of the activities by **kids** from various neighborhoods and socio-economic backgrounds.

We also wanted to learn, incidentally, how teachers, librarians and youth leaders fit our activities into their existing curriculum and programs and how they extended the activities.

Summary

Using the data from our needs assessment, we made several basic decisions about the focus of the project. We would:

- involve children with the greatest need for opportunities to explore nature: those in the central city, especially from middle and lower income families,
- deliver hands-on experiences through schools and non-school neighborhood sites in the most direct way we could — through trained volunteers,
- aim to achieve three defined objectives, and
- conduct a spring-season pilot test to try out all components of the project on a small scale.

The new cities agreed that all their programs would work to achieve **the same three objectives** (listed on page 20), because they discovered that the same basic need existed in each of their communities. But they each saw their projects filling a slightly different niche. They came up with a variety of project designs because each identified the target audiences, sources of volunteers, sites serving children, and financial resources that they saw as most appropriate and/or available in their local communities.

A Paid Project Coordinator

While Denver's Project had raised funds from an anonymous donor to hire a full-time coordinator before conducting a comprehensive needs assessment, the new cities filled the position of coordinator in a variety of ways. Prescott's project was led by a retired corporate executive and former Audubon chapter president who took on the role of coordinator as a volunteer. In Birmingham, the coordinator's role was assumed on a part-time basis by nature center staff and steering committee members who agreed to share the coordinator's role on an interim basis until they could raise enough funds from local foundations to hire a half-time coordinator. In Boston, an existing education staff member at the Massachusetts Audubon Society's Boston urban office and, in Arlington (TX), the School District's Elementary Science Consultant coordinated the projects. Louisville's project leaders amassed funds from the Learning Choice Magnet Schools (a fee to support their students' participation), and from the Louisville Audubon Society and the Kentucky Association for Environmental Education (generous contributions) to hire a part-time coordinator (hired by and housed at the Museum of History and Science). All our projects have concluded that at least a **half-time coordinator**, acquired either by re-assigning the responsibilities of existing staff or by raising funds to hire a new person, is **essential** for launching and sustaining a successful, quality program. (Sample coordinator job descriptions and project budgets are included in the Appendices, pages A3 through A8. Fund-raising suggestions appear on pages 63-70.)

A Variety of Volunteer Sources, Project Sizes and Designs

Target audiences and sources of volunteers also varied from city to city. Project leaders in Ft. Lauderdale decided to begin by focusing on the schools with the most disadvantaged youngsters, while their counterparts in Birmingham chose to target children in the city's housing projects Boston chose to begin their program in a combination of school and after-school sites. In Arlington, schools with very active Parent-Teacher Associations and the Boys Club staff and volunteers launched the project. Some cities started with volunteers from a single source, such as, Audubon members, high school students, or 4th graders' parents. Others recruited their volunteers from a variety of sources ranging from teens to senior citizens. But the guiding principle for all the new projects was to **focus on local resources** that were most readily available and most likely to work well.

By starting with a small pilot test, each city was able to identify shortcomings and work out glitches before they expanded. And expand they did! For example, Ft. Lauderdale's project started with 56 volunteers and 375 children and by its third year involved 195 volunteers and 1,430 children. Seattle's project started with a very small pilot test of only nine volunteers and 44 youngsters, but in its third year was reaching 770 children through 80 volunteers. We recommend highly that you also set your long-range goal, but **start small** and work out the glitches, before you grow.

Selecting Appropriate Learning Activities

- **To take advantage of the wealth of existing natural science and environmental education curricula; and**
- **To find activities that are most appropriate for the targeted audience and setting.**

Our original "Think Tank" group decided that we should draw upon the plethora of existing curricular materials. So, now that we had narrowed our focus and designed a pilot test, we were ready to review the available curricula and select learning activities. We established **five criteria that an activity must meet** to pass muster:

1. It can be done in our locale at the times we scheduled, given our weather conditions and the organisms typically out and about.
2. It is biologically accurate and appropriate for this locale.
3. The directions are clear and straight-forward so that trained volunteers can easily understand the purpose and conduct it.
4. It provides the learner with an experience **outdoors** that **directly** involves him/her with (a) plants and/or animals occurring in the neighborhood, or (b) the habitat in which those organisms live.
5. It can stand alone and be completed in one hour.

We eliminated movies, reading assignments, arts and crafts activities, demonstrations, simulation games, and the like. We wanted to spend our limited time getting the children observing and investigating the natural world in their immediate surroundings.

We reviewed scores of books and curriculum guides including *Ten*

Minute Field Trips, *Acclimatization*, *Project Wild*, *Project Learning Tree*, *Class Project* and *Investigating Your Environment*. We looked at nature study guides and activities, science education books, and environmental periodicals. We decided that the **Outdoor Biology Instructional Strategies (OBIS)* activities fit our criteria best**. When we found a good activity in another source, it was also in OBIS and usually was set forth more clearly there.

The OBIS materials were developed for upper-elementary and middle-school youngsters under a National Science Foundation Grant and underwent much field testing, so we were confident they would work with the upper elementary age range we had targeted.

We asked three biologists and teachers to review the 11 activities we selected in our first sort. Using our criteria and their experience, they identified nine as the best. To delineate which activities would be most appropriate each month, we constructed a chart.

	February Training Workshop	March	April	May
Envirologues a nature scavenger hunt, can be done in any weather	x	x		
Litter Critters search for leaf litter and soil animals	x	x	x	
For the Birds investigate feeding behavior of birds (birds must be preconditioned to come to food)	x	x	x	
Isopods find and investigate behavior of pillbugs and sowbugs			x	x
Plant Hunt find as many different kinds of plants as you can in study area and with Environmental Sun Print make a print of your favorite leaf			2nd half x	x
Flower Powder find out how animals move pollen from one flower to another			2nd half x	x
Roots and Shoots find plants with roots like those of two mystery plants			2nd half x	x
Animals in a Grassland find as many different kinds of animals on a lawn as possible			x	x
Ants find out how ants respond to different situations				x

* *Outdoor Biology Instructional Strategies* (OBIS). Written and developed by Outdoor Biology Instructional Strategies, Lawrence Hall of Science, University of California, Berkeley, CA, 1981. Published by Delta Education, Inc., P.O. Box 3000, Nashua, New Hampshire 03061.

Individual OBIS activities may be purchased from the North American Association for Environmental Education. For a price list and order form, phone or fax NAAEE at 513-676-2514.

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An additional benefit of the OBIS activities is that in most cases the materials and equipment used can be scrounged or made from low cost supplies. This gave many of our behind-the-scenes volunteers, who were not willing to work with kids, opportunities to contribute (making insect nets, donating old sheer curtains and empty film cans, saving milk cartons and coat hangers) and had obvious budgetary implications. It also had merit educationally: the youngsters could see science and scientific tools as things that were easily within their reach. The model for investigating that we gave them was something that they could continue to pursue on their own.

Summary

We decided that the *Outdoor Biology Instructional Strategies* contained the kinds of activities we sought. We could find enough activities that would be appropriate for our spring pilot test and knew that they would work well for our volunteers and children since they had been developed for and field tested extensively with similar people.

The new cities also found OBIS activities to work well for their projects. The OBIS Library contained activities appropriate for every locale. A Boston school located near the shore used "Beach Combing"; Prescott volunteers used "Desert Water Keepers"; Texas Boys Clubs' kids used "Logs to Soil" in their woods; and Seattle's students did "Hold a Hill" around the city. We have made a list of all the OBIS activities that meet our criteria and achieve our objectives, and that VINE projects have found appropriate for their settings and their participants. This list is on pages M35 and M36 in the Materials Appendices at the back of this book.

The **Site Inventory Checklist** (on pages M37 and M39) should help you identify a year-round selection of activities that will work in your locale. We suggest that you set up a committee of biology teachers, naturalists, and other interested people to conduct a month-by-month inventory of your neighborhood sites throughout the coming year.

But you need not complete the whole year-round inventory before you get started. We have found five activities that seem to work virtually **everywhere**, and suggest you start with these. See pages M15 through M31 in the Materials Appendices for details about these starter activities.

Once you have selected the activities that you think will best work in your area, one more step is essential. Go to the neighborhoods where you will be working with children and **actually do the activities using** your set of **prototype materials** (see page M3). This step must be done by one or more project leaders **before** you begin training volunteers and/or producing your materials kits. Why? Because experience has taught us that it can save **lots** of back tracking and false starts. For instance, we discovered that: in Seattle, "Animals in a Grassland" won't work in the spring, and in Prescott, the flying insects are so small that they are NOT captured in nets made from tulle; in Prescott, the first part of "Desert Water Keepers" works very well in February, but the leaves of shrubs and trees are not yet out around the schools so the second part of the activity cannot be done then. By making sure that your selected activities work well in your city's neighborhoods, you'll be able to proceed confidently.

Selecting Pilot Test Sites and Gaining Their Participation

- **To identify host sites that would meet our criteria and enable us to achieve the goals of the pilot test.**
- **To develop a cooperative, productive relationship with host site staffs and to facilitate the acceptance and smooth-running of the program.**

The debut of our Urban Education Project was the pilot test. To lay the ground-work for future success, it was essential for us to get off to a positive start. For this reason, we chose our pilot test sites very carefully using the following criteria:

1. We wanted to make sure that our activities would work in the **various kinds of "typical" central city neighborhoods**. So, we made sure that we had pilot sites in neighborhoods with:
   - long-established, well-tended yards with very few vacant lots or weedy-niches in alleys,
   - high-density housing, businesses, and busy streets (typically these locales had weedy areas in vacant lots or around unoccupied buildings); and
   - newer subdivisions that typically had no vacant lots amid the residences, but frequently had an adjacent open-space or undeveloped area.
2. In order to determine whether our program would interest and work with a full range of children, we had to select sites representing a **socio-economic diversity**. The staffs at the school district's central administrative offices, the city's community relations commission and planning office, and the United Way were helpful in providing us with demographics for different neighborhoods and in pointing out prime areas for our program. We learned about readily available indicators (e.g. Each state sets guidelines for its **free** school lunch program using poverty-level income figures, so any student getting totally free lunches is from a family living at or below poverty level.) The use of such indicators enabled us to gather data about participants without imposing burdensome tasks on the sites.
3. The same agency staff members mentioned in #2 helped us identify **solid, well-organized and respected sites**. They were, for example, able to steer us away from a community center that had a conflict raging between the Board and Executive Director and from another site that was having serious financial difficulties. We did not want our pilot

to be affected by unrelated internal problems of host sites but instead wanted to try out the project in the best possible situations.

4. We needed the **interest, support and cooperation of the host site staff**. Here again we relied on the recommendations of others, but we could also gauge these qualities for ourselves during our initial meeting at each potential host site.

Using information from the Needs Assessment, the Project Director put together an array of potential pilot sites that seemed to meet our criteria, and the Education Committee approved the list of sites.

Meeting with Potential Pilot Sites

The Project Director set up individual meetings with the person in charge of each site. In some cases she met first with the primary administrator who then arranged for a meeting with the teachers or staff members directly responsible for the children. In other cases, the administrator in charge asked that we all meet together right from the beginning. We have found both formats acceptable, but feel it's essential to **involve both administrators and teaching staff**. The purpose of these meetings was to:

- **explain the objectives** of our program **and plans** for the spring pilot test. (Take a sampling of OBIS activities with you.),
- **learn more about their sites' facility,** clientele, interests. (After the meeting, use your Site Inventory Checklist, pages M37 and M39, to determine which activities will work at this site.)
- discuss the sites' preferences regarding **age/grade level of participating children**, find out the **best times** to schedule outdoor activities, and learn about the site's on-going programs/curriculum so that it may be possible to mesh activities with their existing programs.
- reach a tentative **agreement on their participation** in the pilot test.

The majority of these meetings were with people we had interviewed during the needs assessment. We had already established some rapport with them, and this contact served as a welcome return visit and report on our progress. For the new people, we were able to break the ice by mentioning the name of the person who had referred us to them. We found these details important, because they helped us develop credibility.

We also found that it is important for **one** person to be the on-going **contact for each site**. For us, that person was the Project Director. It could just as well have been a dependable, well-organized volunteer.

Schools and community organizations, in our experience, are skeptical about volunteers and volunteer-delivered programs. They have had experiences where past programs have never materialized because of lack of follow-through on the part of the volunteers or because the result has been negative due to lack of quality control.

In some cases, potential host sites are concerned about the division of labor (exactly what we expect of them and whether they can fulfill those expectations) and about whether this new program will take away from existing programs.

When these concerns are addressed straightforwardly in the initial planning stages, we have been able to build much more constructive programs and cooperative relationships with host sites.

SITES FOR PILOT TEST (SPRING 1985)

		Participating Children						Volunteers	
	Contact Person	Number in Pilot	Grade/ Age	Potential Number at Site	Racial Make-up	Median Income	% Families Below Poverty Level	Number	Time Needed
SCHOOLS									
McKinley-Thatcher Elementary 1235 S. Grant Denver 80210	Rosie Dickens Principal 777-8816	55	3rd or 5th	168	51% Anglo/Other 22% Black 27% Hispanic	$10,500*	28%*	4	2 classes scheduled back-to-back during school day
Holm Elementary 3185 S. Willow Court Denver 80231	Jim Tracy Principal 751-3157	60	5th	180	61% Anglo/Other 42% Black 3% Hispanic	$23,000*	20%	4	2 classes scheduled back-to-back during school day
McGlone Elementary 4700 Crown Boulevard Denver 80239	Melvin Rodie Principal 373-5080	55	4th	540	23% Anglo/Other 55% Black 12% Hispanic	$21,000*	9%*	4-5	2 classes scheduled back-to-back during school day
LIBRARIES									
Park Hill Branch 4705 Montview Boulevard Denver 80207	Judy Stovall 322-3631	15	3rd-4th	100	82% Anglo/Other+ 14% Black 5% Hispanic	$19,000*	10%*	2	10-11 a.m. Sat.
Ford Warren Branch 2825 High Street Denver 80205	Mildred Hall 294-0907	15	3rd-4th	100	11% Anglo/Other+ 81% Black 8% Hispanic	$5,800*	42%*	2	10-11 a.m. Sat.
AFTER SCHOOL DAY CARE									
Gilpin Extended Day 2949 California Denver 80205 (a Denver Public School pilot facility)	Mary Pat Howe & Keith Stevens 297-0313	10	5th-6th	178	58% Anglo/Other 29% Black 13% Hispanic	unknown	12%	2	4:15-5:15 p.m. weekdays
Armstrong Child Development Center 2820 Harrison Denver 80205 (a non-profit facility)	Shirley Armstrong 377-7141	10	3rd-6th	more in summer time	100% Black	$14,500*	12%*	2	4-5 p.m. weekdays (prefers April)
COMMUNITY CENTERS									
Curtis Park Community Center 929 29th Street Denver 80205	James Willis & Sally Gerdes 295-2399	15	6-12 yr. olds	hundreds	40% Black 60% Hispanic	$5,000	100%	2	4:30-5:30 p.m. weekdays
Auraria Community Center 1212 Mariposa Denver 80204	Adolpho Gomez & Gene Giron 534-7616	15	3rd-6th	over 2,000	30% Anglo/Other and Black 70% Hispanic	$8,000	47%*	2	10-11 a.m. Sat.

* Source: City and County of Denver's 1980 Neighborhood Census Project
+ Source: Denver Data, 2nd Edition, Denver Planning Office

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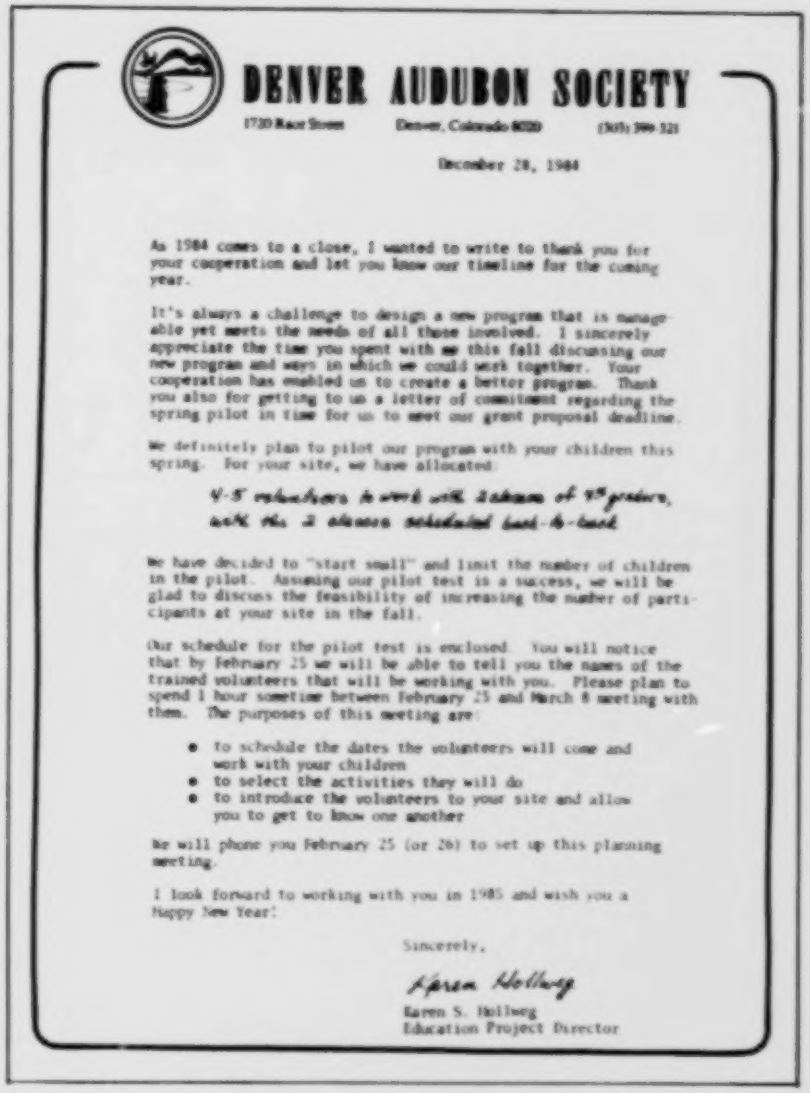


DENVER AUDUBON SOCIETY
1720 Race Street   Denver, Colorado 80206   (303) 399-321

December 28, 1984

As 1984 comes to a close, I wanted to write to thank you for your cooperation and let you know our timeline for the coming year.

It's always a challenge to design a new program that is manageable yet meets the needs of all those involved. I sincerely appreciate the time you spent with me this fall discussing our new program and ways in which we could work together. Your cooperation has enabled us to create a better program. Thank you also for getting to us a letter of commitment regarding the spring pilot in time for us to meet our grant proposal deadline.

We definitely plan to pilot our program with your children this spring. For your site, we have allocated:

4-5 volunteers to work with 2 classes of 4th graders, with the 2 classes scheduled back-to-back

We have decided to "start small" and limit the number of children in the pilot. Assuming our pilot test is a success, we will be glad to discuss the feasibility of increasing the number of participants at your site in the fall.

Our schedule for the pilot test is enclosed. You will notice that by February 25 we will be able to tell you the names of the trained volunteers that will be working with you. Please plan to spend 1 hour sometime between February 25 and March 8 meeting with them. The purposes of this meeting are:

- to schedule the dates the volunteers will come and work with your children
- to select the activities they will do
- to introduce the volunteers to your site and allow you to get to know one another

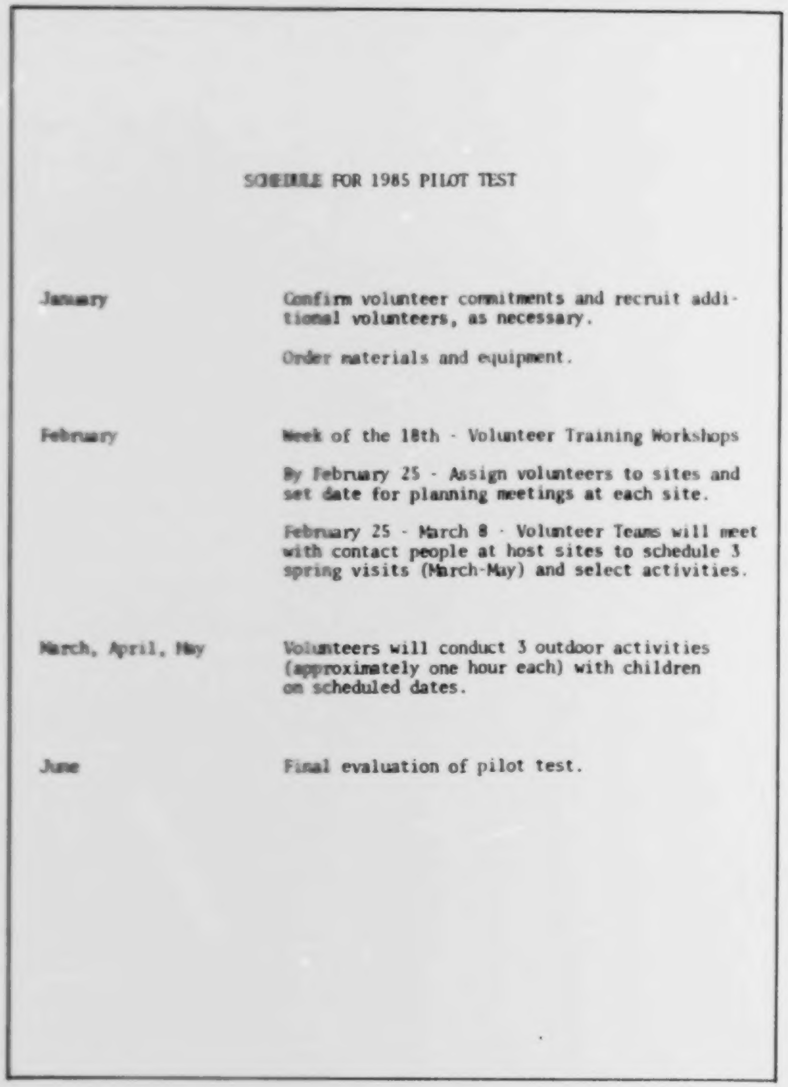
We will phone you February 25 (or 26) to set up this planning meeting.

I look forward to working with you in 1985 and wish you a Happy New Year!

Sincerely,

Karen Hollweg

Karen S. Hollweg
Education Project Director



SCHEDULE FOR 1985 PILOT TEST

January	Confirm volunteer commitments and recruit additional volunteers, as necessary. Order materials and equipment.
February	Week of the 18th - Volunteer Training Workshops By February 25 - Assign volunteers to sites and set date for planning meetings at each site. February 25 - March 8 - Volunteer Teams will meet with contact people at host sites to schedule 3 spring visits (March-May) and select activities.
March, April, May	Volunteers will conduct 3 outdoor activities (approximately one hour each) with children on scheduled dates.
June	Final evaluation of pilot test.

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Cementing our Agreement

In every case, we reiterated the arrangements in writing and asked the host sites to formalize their commitment in writing too. For the pilot, we asked each site to send us a letter confirming their participation in the spring pilot test. Then we sent them a letter cementing our plans and setting forth the pilot schedule (page 28). (In subsequent years, we used a **Memo of Agreement** which both parties sign. See pages A36 and A37 in the Appendices.)

Summary

We selected pilot test sites to include:

- a diversity of habitat types,
- a range of socio-economic, cultural and racial make-ups,
- a variety of grade/age combinations, and
- schools and non-school facilities with solid reputations and interested staffs committed to the Urban Education Project.

By meeting with each site to plan for its participation we could tailor the program to each situation and address individual concerns.

School district officials in Seattle and school administrators who were members of the project steering committee in Louisville identified pilot schools for the projects in those two cities. In Prescott, Ft. Lauderdale, and Arlington, project leaders knew which schools would be good pilot test sites and talked directly with their principals and teachers. A key to the expansion of the pilot program in each of these cities was the fact that the pilot schools' principals were **respected advocates** and when they recommended the program to their colleagues, those recommendations were well regarded. We suggest you think about this as you select your pilot sites.

These same techniques of going to respected sites that project leaders know and taking the recommendations of other professionals also worked to identify non-school pilot sites in Louisville, Birmingham and Seattle. Their projects reached kids at an array of institutions that have after-school and summer programs for urban 8 to 12 year-olds: housing projects, community centers, chruch facilities, Boys and Girls Clubs, YMCA's.

In general, new cities have most clearly set forth and amicably agreed upon the responsibilities of site staff members and project volunteers through a **combination of face-to-face meetings** (as outined on page 26) **and written agreements between project coordinators, site administrators and staff**. See another example of written material given to host sites in the Appendix on page A39.

All of these projects have found that schools and non-school sites with children 8 to 12 years old welcome their volunteers and enthusiastically embrace the program. In fact, every city has found that the demand for the program exceeds their ability to expand and recruit enough volunteers!

Recruiting and Training Volunteers

- **To organize a system for recruiting and activating volunteers.**
- **To place volunteers in positions they enjoy and find satisfying.**
- **To give the volunteers the training and support needed to be successful.**

We already had the names of many potential volunteers from the phone calls that were made as part of the needs assessment. During the intervening months we also had people respond to newsletter articles and pitches made at our monthly meetings. The project staff kept track of the names, addresses, phone numbers and interests of each prospect (on 4" X 6" cards) and now that we were ready to involve many more people, we contacted them.

Activating Volunteers

Everyone received a letter up-dating them on our progress and giving them two options for getting involved. Job descriptions specified the types of commitments we were asking them to make, and a form gave them a mechanism for responding. The form also gave us much information about their interests, preferences and schedule constraints. This information allowed us to adapt the program schedule to include as many volunteers as possible.

> *"These volunteers are great! They really get the children involved in digging, gathering, catching, and watching – and the students love learning outdoors."*
> – 4th Grade Teacher

DENVER AUDUBON SOCIETY
1720 Race Street Denver, Colorado 8020
399-207 or 399-321

January 2, 1985

To: Education Project Volunteers
From: Karen Hollweg, Project Director
Topic: Opportunities for Getting Involved in 1985

Thanks to you and others like you, response to our new Urban Education Project this fall has been tremendous. Scores of members have contributed money to sustain the project, and over 60 members have volunteered their time to work with kids or help behind the scenes.

We're writing to you because you've expressed an interest in the program. When we last communicated, we were still planning the education program and making arrangements for our 1985 pilot test. Now we're ready to roll, and we want to enlist your full participation in one of two specific ways.

Option 1, working with youngsters: This spring, trained volunteers will begin exploring the plants and animals in Denver neighborhoods with small groups of children. Five 7 to 12 year-olds and their Audubon guide will, for example, search for small animals living in the soil, find out how insects move pollen from one flower to another, and investigate the feeding behavior of birds. The groups will set out from a variety of schools, after-school day care facilities, libraries and community centers which are cooperating in our 1985 pilot test. Both children and volunteers are bound to make some fascinating discoveries and increase their understanding of nature through these adventures. (See details on enclosed yellow sheet)

Option 2, putting together the tools and supplies needed to conduct these explorations: Some members have told us that they don't relish the thought of working with kids. If you're in that group, we need your help too. Lots of behind-the-scenes preparations have just begun. We need to assemble and organize the strainers, containers, and other learning materials that each group will use as they explore their surroundings. (See blue sheet for details)

Please let us know which opportunity you'd like to pursue by filling out and mailing to us the enclosed VOLUNTEER INFORMATION FORM. We're counting on your participation. Our preliminary surveys have shown that we have more volunteers available to work with kids on Saturdays than on weekdays. If your schedule is somewhat flexible and you could participate at either time, please note that on your form.

We hope you'll start out the New Year by committing 3-4 hours/month to the Education Project. In return, we can guarantee you some enjoyable times working with fellow Auduboners and the sense of satisfaction that comes from contributing to the education of youth and the future of our community.

I look forward to working with you in 1985!

Karen

NATURE GUIDES will work directly with groups of 5-7 children (aged 7-12 years) conducting learning activities specifically selected for use in Denver neighborhoods.

What qualifications/background do I need to become a Nature Guide? The most important qualifications are a love of the natural world and a desire to help kids discover the joys of nature by exploring with them the living things in their own neighborhoods. No previous experience in biology and/or teaching is necessary.

The activities we'll be using are simple and enjoyable, and any information necessary to lead them will be provided. You'll be exploring and discovering neighborhood plants and animals with the children...discovering how many different kinds of insects you can find, watching how birds or sow bugs react to different situations, looking for plants with unusually shaped leaves.

What commitment do I need to make? We ask you to volunteer a minimum of 3-4 hours/month from February through June. We need people during weekdays, after work (about 4-5:30 p.m.). and Saturday mornings. When you choose to volunteer time is up to you. All we ask is that once you have agreed to participate, you honor your commitment.

How will I know what to do? We will conduct Training Workshops the week of February 18. Each guide will be expected to participate in one of the workshops. We'll conduct one during the week and one on Saturday in an attempt to accommodate everyone's schedule.

At the Workshop you'll do some of the activities and have chances to explore living things in a typical Denver neighborhood, while becoming familiar with the program's objectives. In addition, there will be opportunities to gain ideas about working with small groups and managing equipment/materials outdoors. You'll also get to know the other volunteers you'll be working with.

Between February 25 and March 8 you will have a planning session at your pilot site. Working with the host staff member(s) and the other volunteer(s) who'll be serving that site, you'll schedule activities for the spring and learn about the site and the children there.

When and where will I be expected to work with children? We have set up 9 pilot test sites throughout Denver. The adults at each of these are genuinely excited about the prospect of Audubon volunteers taking their children outdoors to explore the plants and animals in their immediate surroundings. The chart on the back of this page lists the sites, describes the children we'll work with, and shows the times and numbers of volunteers needed.

You will have an opportunity to team up with other compatible volunteers, identify the sites you prefer, and work out a schedule that is agreeable for you and the host site. In most cases, you'll return to the same site 3 times -- once in March, once in April, and once in May.

What happens in June? In June, we'll expect all guides to attend a follow-up meeting. At this session, you'll have a chance to compare your results with those of other volunteers, help us evaluate the program and make suggestions for improving it.

Some pilot sites have already asked us if volunteers will be able to continue these activities in the summer. There will undoubtedly be opportunities for those who wish to continue working with groups of children after our pilot test is completed to do so.

Summary of Dates and Commitments

Feb. 16-23 Training Workshops - Participate in one 3-hour session.
Feb. 25-March 8 Planning Sessions - Each team schedules a 1 hour meeting at their pilot site.
March, April, May Each team conducts 3 activities with kids as scheduled at site (1 activity/month).
June Follow-up Meetings - Participate in one 2-hour session.

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MATERIALS ASSISTANTS - will prepare the instructional materials and tools for the children to use in their explorations.

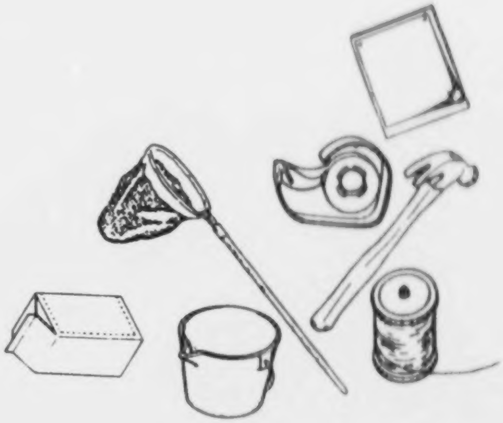
What qualifications do I need to become a Materials Assistant? The most important qualification is a desire to work on the Education Project and help it succeed. We can use people who are handy with tools (to cut wire, drill holes, make handles for nets, etc.), enjoy sewing (to make insect nets), have some extra space (to collect milk cartons and other containers), or enjoy organizing (to package and label sets of materials).

How will I know what to do? We'll introduce you to the activities the children will be doing and will provide patterns and directions for equipment and materials that need to be made.

What commitment do I need to make? We ask you to volunteer a minimum of 3-4 hours per month from February through June. We welcome people who can work on materials days, evenings and/or weekends -- anytime you choose. All we ask is that once you have agreed to participate, you honor your commitment.

When and where will I be expected to work? Some members have volunteered to work in their own homes; others want to come to the office and work on a project with a group of folks. We need both. When you're part of a group we'll try to schedule the working sessions at a time that's convenient for everyone -- e.g. one afternoon, evening, or morning each month from February through June.

If, in addition, you'd like to observe a group of children using the materials you've prepared, we'll be happy to help you arrange that.



VOLUNTEER INFORMATION FORM

Please complete & mail this form to
DENVER AUDUBON SOCIETY
URBAN EDUCATION PROJECT
1720 Race
Denver, CO 8020
by January 15, 1985

Name	______________	Phone number(s)	Best time(s) to call
Address	______________	(home) ________	________
	______________	(work) ________	________

I want to volunteer 3-4 hours/month as a

___ Nature Guide. I understand I will be expected to participate in a February Training Workshop, a February or March Planning Session, and a June follow-up meeting, and to conduct 3 neighborhood activities with children (March-May).

___ Materials Assistant. I will work at the Audubon office or at home (as I have indicated below) to prepare materials for children to use as they explore their neighborhood.

___ I'm not sure, but I definitely want to get involved. Please phone me to discuss the options.

OPTION 1: NATURE GUIDE

(See job description on yellow sheet.)

Best time(s) for me to volunteer:
(If your schedule is flexible and more than one time is possible, please note all possibilities.)

___ weekday (early afternoon)

___ after work (about 4-5:30 p.m.)

___ Saturday (about 10-11 a.m.)

I understand that after the Training Workshop, volunteers will form teams and select pilot sites. If you have a strong preference and/or could only work at one of the sites listed, please indicate your preference here:

Training Workshops will be scheduled for the week of February 18. Each volunteer will be expected to attend one workshop. To help us in scheduling these workshops so that they're accessible to everyone, please check all possible dates on which you could attend a workshop:

		9-12 AM	1-4 PM
Feb. 16	Sat	___	___
Feb. 18	Mon	___	___
Feb. 19	Tues	___	___
Feb. 20	Wed	___	___
Feb. 21	Thur	___	___
Feb. 22	Fri	___	___
Feb. 23	Sat	___	___

We will try to select workshop dates that make it possible for everyone to attend one. Final dates will be announced the first week in February.

OPTION 2: MATERIALS ASSISTANT

(See job description on blue sheet.)

I could attend meetings on:

___ weekdays
Please circle
Best days: M T W T F

___ evenings
Please circle
Best days: M T W T F

___ Saturday mornings

I prefer to work on materials at home ___

I would be glad to:

___ sew insect nets

___ drill holes in plastic and wood

___ construct handles for nets, pond scooping tools, etc.

___ package up sets of materials

___ serve as a collecting point and have members bring materials (such as milk cartons, plastic containers, coat hangers) to my home for temporary storage.

If you have any experiences and/or skills related to this project that you'd like to tell us about before the Training Workshop, please note them on the back of this form.

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Whenever we do a mailing to a group of people with whom we've already worked, we find that we only get responses from about half. The reason (whether they don't read their mail, are too busy to answer it, or whatever) is unknown. What we do know is that we must plan a follow-up call to those who don't respond. (In this case 14 additional people responded once we reminded and encouraged them.)

In fact, you can see from the data on pilot volunteers (below) that our first needs assessment phone-a-thon was our largest single source of volunteers. That continues to be the case, although we have found other good means of recruiting too. (See the section entitled "Expanding the Program.") The bottom line is that **people need to be asked**, and a phone call is a simple way to ask them, discuss any questions or concerns they may have, and get their answers.

Means of Recruiting Volunteers Spring Pilot '85	**Nature Guides* Number/ Percent**	**Materials Volunteers Number/ Percent**
October '84 phone-a-thon	9 / 33%	8 / 73%
Personal contact/ word-of-mouth	7 / 26%	
Monthly meeting pitch	3 / 11%	
Newsletter article appeals	3 / 11%	2 / 18%
People walking into office	2 / 7%	
Annual appeal response envelope	2 / 7%	1 / 9%
New member survey	1 / 4%	
Total	27 /99%	11/ 100%

*We struggled and considered many options before settling on the title of "Nature Guides" for the volunteers who work with children. The name never really "took". They currently refer to themselves as "volunteers" or "education volunteers", and we refer to them as "kid-volunteers" to distinguish them from behind-the-scenes or "materials-volunteers".

As the response came in, we saw that we needed 6 more weekday volunteers to work at school sites. To fill this gap, we asked existing volunteers to invite their friends or to give us the names of likely prospects. By phoning them we were able to recruit adequate numbers for the pilot.

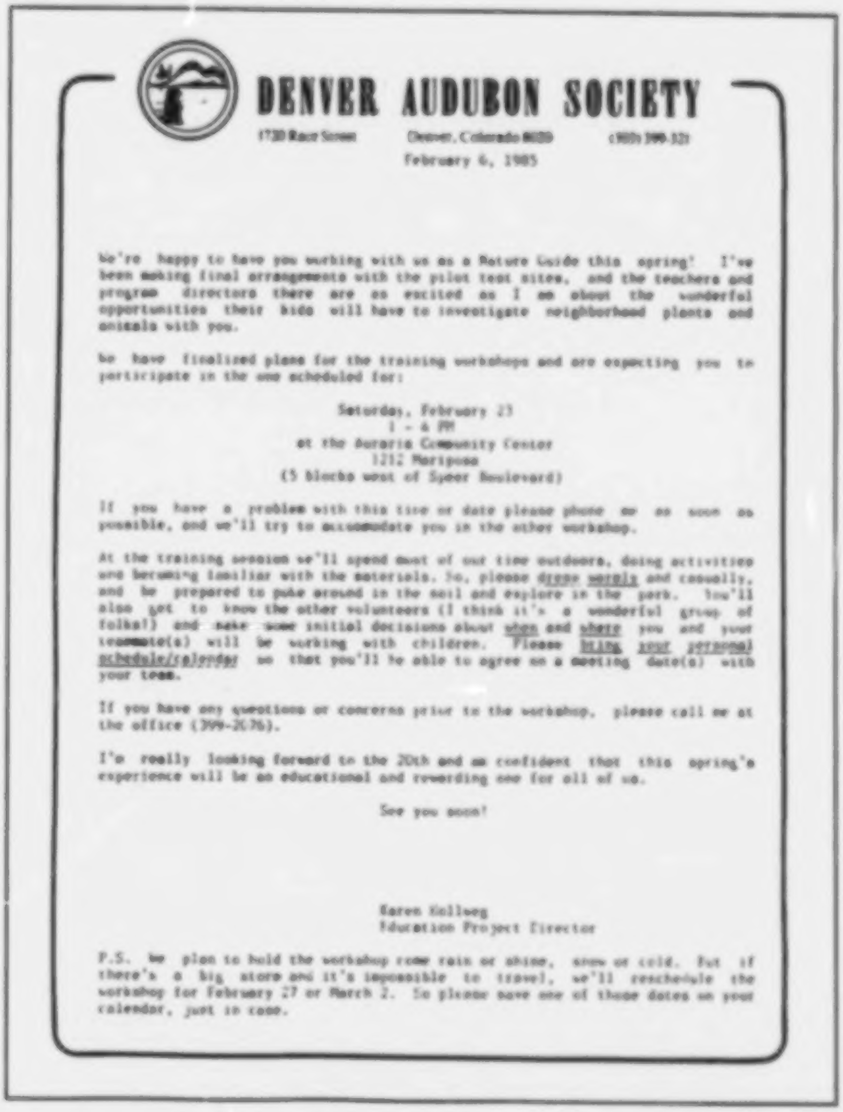
Training Volunteers

The Materials Volunteers specialized in preparation of materials for the pilot test. (See the next section, "Assembling Materials and Supplies," for a description of their training and efforts.)

The others, "kid-volunteers" who wanted to conduct activities with children, were required to attend a **three-hour training workshop**. We set the dates so that everyone could attend either the Saturday or the Wednesday session, and mailed a confirmation letter to each participant.

Each workshop included:

- an introduction to the program (purpose, philosophy, objectives, organization, roles of volunteers),
- opportunities for everyone to socialize, to enjoy refreshments, to get to know one another, and to form teams,
- participation in 2-3 OBIS activities out-of-doors (to provide models of the role of adult leader, and to enable volunteers to become familiar with the activities and their formats); and
- opportunities to discuss volunteers' questions and concerns.



DENVER AUDUBON SOCIETY
1720 Race Street Denver, Colorado 80206 (303) 399-3219

February 6, 1985

We're happy to have you working with us as a Nature Guide this spring! I've been making final arrangements with the pilot test sites, and the teachers and program directors there are as excited as I am about the wonderful opportunities their kids will have to investigate neighborhood plants and animals with you.

We have finalized plans for the training workshops and are expecting you to participate in the one scheduled for:

Saturday, February 23
1 - 6 PM
at the Auraria Community Center
1212 Mariposa
(5 blocks west of Speer Boulevard)

If you have a problem with this time or date please phone me as soon as possible, and we'll try to accommodate you in the other workshop.

At the training session we'll spend most of our time outdoors, doing activities and becoming familiar with the materials. So, please dress warmly and casually, and be prepared to poke around in the soil and explore in the park. You'll also get to know the other volunteers (I think it's a wonderful group of folks!) and make some initial decisions about when and where you and your teammate(s) will be working with children. Please bring your personal schedule/calendar so that you'll be able to agree on a meeting date(s) with your team.

If you have any questions or concerns prior to the workshop, please call me at the office (399-2076).

I'm really looking forward to the 20th and am confident that this spring's experience will be an educational and rewarding one for all of us.

See you soon!

Karen Hollweg
Education Project Director

P.S. We plan to hold the workshop come rain or shine, snow or cold. But if there's a big storm and it's impossible to travel, we'll reschedule the workshop for February 27 or March 2. So please save one of those dates on your calendar, just in case.

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Our philosophy of learning through hands-on experiences applies to our volunteer training as much as it does to our program for children. So, the volunteers spent a full two hours outdoors doing the activities they would later conduct with children. The activities were led by teachers experienced in investigative learning, OBIS activities, and conducting workshops for adults and children. By participating in each activity from start to finish as a learner, the volunteers had opportunities to experience the need for time to search, the value of finding and observing with a partner, the thrill of discovering and figuring out previously unobserved phenomena, the importance of the small group discussions, and the role of the person leading the group. When we ask volunteers to evaluate their training, the majority point to "actually doing the activities" as the parts of the workshops that they find most worthwhile. (See pages A9 and A10 for a sample workshop agenda.)

Each volunteer received a set of materials: a DAS name tag, a magnifying lens on a string necklace, and a 2-pocket portfolio with a set of information sheets about the program and their responsibilities on the left side and on the other side, a list of spring activities and a full set of OBIS activity cards for the season. (A copy of the materials included in the volunteer's portfolio appears in the Appendices on pages A14 through A31. Page A11 contains a copy of a check-out card used to keep track of the volunteer portfolios. They also make a useful card-file directory for phoning and mailing things to the volunteers.)

The workshops were held at pilot sites, so by the end of the session, the volunteers were convinced that at least three of the activities worked at that site, and as long as their site was similar, would work there too. They had seen how two experienced teachers conducted the activities, and had in-hand directions for conducting each of the spring activities.

The workshop gives the volunteers a vivid picture of the program and the role they are expected to fill. Occasionally, volunteers tell us at this point that they don't feel comfortable filling that role and would rather work behind-the scenes. And once or twice we've also spotted volunteers who don't seem to have the skills necessary to guide children in hands-on investigations, and have counseled them into other volunteer jobs. Both the program and the volunteers benefit from these mid-course corrections.

The next step was to assemble teams of volunteers and to arrange a **planning meeting with each team of volunteers at its assigned site**. While there, the team and project director would:

- meet with the site staff,
- get to know the facility and hear about the children,
- agree on dates and times for each activity and for a rain-date,
- scout the area to determine which specific activities from their portfolio of activities would work best, and
- locate the best areas for doing the activity.

By the end of this planning meeting, each volunteer team and site knew their responsibilities and was ready to start conducting activities with children. (See page A35 in the Appendices for a sample Planning Meeting Agenda, and pages A36 through A41 for other written materials for host sites.)

SITES FOR PILOT TEST (SPRING 1985)

		Participating Children					
	Contact Person	Number in Pilot	Grade/Age	Racial Make-up	Median Income	% Families Below Poverty Level	Volunteers/Time
SCHOOLS							
McKinley-Thatcher Elementary 1235 S. Grant Denver 80210	Rosie Dickens Principal 777-8816	26 26	Mrs. Yolanda Montoya's 4th - 5th Mrs. Ruth Hilliard's 6th	51% Anglo/Other 22% Black 27% Hispanic	$10,500*	28%*	March 27, April 24, May 15; 12:30-3 pm Laverne Axford, Cleo Bloomquist, Kathi Demeret, Alan Peters
Holm Elementary 3185 S. Willow Court Denver 80231	Jim Tracy, Principal Dave Thompson, Asst. 751-3157	30 30	Mrs. Julie Rumsey's 5th Mrs. Elaine Lindsey's 5th	61% Anglo/Other 42% Black 3% Hispanic	$23,000*	20%	March 28, April 11, May 9; 10:15 am - 12:15 pm Jennifer Hall, Pam Bent, Kathy Hollander, Vivian Reed
McGlone Elementary 4700 Crown Boulevard Denver 80239	Melvin Rubie, Principal Ruth Lane, Asst. 373-5080	27 28	Margaret Pacheco - 4th Louise Ruskamp - 4th	23% Anglo/Other 55% Black 12% Hispanic	$21,000*	9%*	April 16, 30; May 14; 12:30-3 pm Anne Halverson, Urling Kingery, Marilyn Stokes, Eleanor Weingart
LIBRARIES							
Park Hill Branch 4705 Montview Boulevard Denver 80207	Judy Stovall 322-3631	15	3rd-4th	82% Anglo/Other+ 14% Black 5% Hispanic	$19,000*	10%*	April 13, 27; May 11; 10:30-11:30 am (Sat.) Herbert Bretnall, Laurie Duke, Ben Duke
Ford Warren Branch 2825 High Street Denver 80205	Mildred Hall 294-0907	15	3rd-4th	11% Anglo/Other+ 81% Black 8% Hispanic	$5,800*	42%*	March 23, April 27, May 18; 11 am - 12 noon (Sat.) Steve Bernard & Tom Hardy
AFTER SCHOOL DAY CARE							
Gilpin Extended Day 2949 California Denver 80205 (a Denver Public School pilot facility)	Mary Pat Howe & Keith Stevens 297-0313	8	5th-6th	58% Anglo/Other 29% Black 13% Hispanic	unknown	12%	March 8 - May 31 (NOT April 5) (Fridays) 4:14-5:15 pm Sue Walter & Donna Allen
Armstrong Child Development Center 2820 Harrison Denver 80205 (a non-profit facility)	Shirley Armstrong 377-7141	10	3rd-6th	100% Black	$14,500*	12%*	4-5 pm weekdays (prefers April) Barbara Bauler & Michelle Foss
COMMUNITY CENTERS							
Curtis Park Community Center 929 29th Street Denver 80205	James Willis & Sally Gerdes 295-2399	15	8-12 yr. olds	40% Black 60% Hispanic	$5,000	100%	April 10, 17, 24, Wednesdays 4:30-5:30 pm Della Rumsey & Lynn Wohlfeld
Auraria Community Center 1212 Mariposa Denver 80204	Adolpho Gomez & Gene Giron 534-7614	15	3rd-6th	30% Anglo/Other and Black 70% Hispanic	$8,000	47%*	April 27, May 4, May 11 10:30-11:30 am (Saturdays) Maren Reid, Jerry Brewer, Eileen Stark

* Source: City and County of Denver's 1980 Neighborhood Census Project
+ Source: Denver Data, 2nd Edition, Denver Planning Office

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Summary

Our volunteer recruitment process included 2 stages: advertising and collecting the names, addresses and phone numbers of potential volunteers, and asking these prospects to submit a written form indicating their commitment and decision regarding the role they wanted to fill, based on printed job descriptions.

Volunteers who wanted to work with children had to attend a three-hour training workshop and a 45 to 60 minute planning session at a pilot test site.

The training procedures for Materials Volunteers are described in the following section.

Additional Volunteer Recruiting Strategies

Two basic strategies were key in recruiting adult volunteers as new cities started their programs:

1. Project leaders recruited new volunteers by **asking**. Phone calls to Audubon members in Seattle, talking with fellow church members and retired teachers or principals in Florida, asking a community college ornithology teacher and phoning prospects she recommended in Arizona, all proved to be successful strategies. **By asking the leader of a group, you may be able to enlist the participation of a number of people via one contact.** For example, each school's PTA leader in Texas contacts fellow PTA members and prospective parents recommended by the teachers and recruits her school's team of volunteers; in Prescott, a special education teacher agreed to supervise his class in preparing materials for the program, and the school district's coordinator of volunteers phoned people from her prospect lists; in Boston, the Harvard Outing Club recruited a team of college students to volunteer at a neighboring elementary school, and the "Annual Public Service Day" projects of a private school and a university provided a dozen volunteers who spent a very productive Saturday making materials and assembling kits; and in Ft. Lauderdale, a community-minded bank recruited a team of volunteers through their employee's newsletter.

2. A **variety of media** were used to make people aware of the program. In a few instances, these tactics caused a person to volunteer, but in the vast majority of cases, they only **increased awareness and laid the groundwork for the leader who asked** others to volunteer. Boston used radio PSA's, Prescott used coffee shop place mats that are printed locally and distributed throughout the community, Louisville used the newsletter that goes to all school district employees and the museum's newsletter, Seattle used a school district publication that's distributed to all households. Virtually every city got coverage in their local newspaper with photos, and some TV stations even showed pictures of the kids and volunteers in action! When Prescott's volunteers were surveyed regarding how they

first learned about the project, they mentioned a whole array of sources. Business schools teach that an average of eight approaches (ads of various kinds) are needed before a consumer responds. So, don't hesitate in thinking big and advertising your program's needs through a variety of outlets.

Training Workshop Improvements

Training workshops and planning meetings for volunteers have continued to be important program elements in the new cities. Project leaders in Prescott and Seattle have successfully dealt with volunteers' concerns regarding childrens' behavior and provided tips on setting expectations for the kids by getting experienced teachers to give constructive examples and answer questions in their workshops. Another improvement that is now used in several cities are "help cards" — these are 3" x 5" cards that are either written by the volunteers or printed and distributed by workshop leaders to help volunteers remember the action steps and discussion questions for each activity and to give them guidelines regarding the amount of time to spend on each part. (See pages A9 and A13 in the Appendices for a sample agenda and sample "help card".)

An Entirely New Source of Volunteers: High School Teens

In 1988, the founders of the Urban Ecology Project in Louisville, KY, decided to recruit their volunteers from the city's public high schools and from the young adults who participated in the city's summer Job Training Partnership Act (JTPA) program, as well as from local conservation environmental organizations and parent groups. The two sources of teenagers turned out to provide the large number of volunteers needed to reach the 2,000 to 3,000 elementary students involved in Urban Ecology each year and became the backbone of the program.

The Boston project's steering committee also identified teen volunteers as potential group leaders for their program. Initial ventures with teen volunteers from an urban teen center were dropped because the participation of teens from this non-school setting was not dependable enough. Later efforts in training and using high school volunteers were successful. By 1990-91 high school and college students became the sole source of group leaders, and the program was named the "Teen/Elementary Teaching Partnerships."

The B.O.N.U.S. project in Florida began using high school volunteers along with their adult volunteers in early 1989, and they have found that the way to meet their program's volunteer needs is with a **combination of teen and adult volunteers.**

The experiences in these three cities have proven that teen volunteers can be used to deliver this kind of program. In addition, they have found that certain organizational procedures and changes in volunteer training are needed to make this arrangement work well.

The single most important step in establishing a teen volunteer program is **identifying and meeting with the adults sponsoring the involvement of the teens.** For programs run during the school day, that means identifying and meeting with the principal and teacher at a participating high school. For after-school and/or summer programs, it means meeting with the administrator and education or teen program director of a Boys & Girls Club or community program that works with teens. Pages 39-43 specifically describe techniques used to involve high schools, but the basic principles also apply to non-school institutions serving teens. Some further information about Louisville's summer teen program is on pages 45-46.

These high school sponsors have, in most cases, been identified through personal contacts. David Wicks, a member of Jefferson County School District's central administration and a project steering committee member, linked Louisville's Project Coordinator with the community- involvement-oriented principal and super science/ecology teacher at Shawnee High School. They immediately involved their students. The next year, announcements in the district's newsletter for employees, letters of invitation from the principal to his fellow-principals, follow-up phone calls from David, and a morning informational meeting at Shawnee High School, recruited an additional four high schools into the Louisville project.

In Ft. Lauderdale, an elementary school principal and a high school biology teacher on the Project Steering Committee identified likely candidates and recruited their first sponsoring high school teachers and principals. They have gotten five additional high schools involved by speaking directly with principals and teachers.

In Boston, another large urban district, no one associated with the project had good high school contacts. But they discovered the Thomas Jefferson Forum, an organization promoting community service/ volunteerism among high school students. John Bengel, the Forum's Director of School Programs, connected them with principals and teachers who were in-tune with the project's philosophy and interested in serving as sponsors.

[NOTE: The Boston, Seattle, and Birmingham (AL), projects have all recruited college students as volunteers via ecology/outdoor clubs and teaching/community-service courses or projects. They have found that they can train and work with these students as they do any other group of adult volunteers. Therefore, they are **not** included in this section on teen volunteers.]

In the **meeting with the sponsoring high school principal(s) and teacher(s)**, each city has found it important to:

- review the overall format of the project (training sequence, curriculum/activities used, format and sequence of events at elementary schools on activity days, and the value of this leadership/teaching experience to participating teens),
- set out logistical details of teen involvement (see list of items and sample forms on the following pages), agree on the Sponsoring Teacher's role (see page 40 for an example) and dates for training and for elementary school activities, and

BROWARD
COUNTY
AUDUBON SOCIETY

Broward
Outdoor
Natural
Urban
Studies

HIGH SCHOOL SPONSOR RESPONSIBILITIES

1. Transportation
2. Permission slips
3. Permission from teachers for students to miss school.
4. Remind students of date and time of activity.
5. Hold pre-activity prep session to refresh student volunteers.

HIGH SCHOOL
VOLUNTEER INFORMATION FORM

NAME

ADDRESS

ZIP CODE

PHONE NUMBER

JOB DESCRIPTION

1. You will be teaching groups of 6 elementary students at various elementary schools around Louisville.
2. You will be working with the same group of elementary students once a week for three weeks.
3. You will meet the Urban Ecology leader at __________________ and be returning to school by ______________________.
4. _________________________ and _________________________ are the days you will participate in Urban Ecology.
5. You will be working outdoors.

REQUIREMENTS

1. Love/like of youngsters.
2. Love/like being outdoors.
3. Signature of the teacher whose class you will be missing.
4. C or better average.
5. Signed transportation form.
6. Signed volunteer insurance form.
7. Signature from parent or guardian.
8. You must stay in this program for at least two months (or two elementary schools).

Signed:

______________________________ (student)

______________________________ (sponsoring teacher)

______________________________ (parent or guardian)

______________________________ (teacher, _____ period)

- agree on a means for informing the high school faculty about the program, so that they will know what's going on when students miss their classes. (The Project Coordinator may give a brief overview of the project at a faculty meeting, a project brochure with a cover memo from the principal may be distributed to each teacher, or a memo jointly signed by the principal and Sponsoring Teacher may accompany the sign-out/permission slip that each participating teen must have signed by his/her teachers. Sponsoring Teachers have found this step to be very important in reducing complaints from colleagues regarding students missing class.)

In using teen volunteers there are several **things that need to be considered prior to starting**. They include:

1. **Which students to involve** - The three cities mentioned above have used teen volunteers spanning the entire range of academic abilities from those with very poor grades and at risk of dropping out to gifted super-students. Teens of all ability levels have worked. More important is the selection of students from a **coherent group** that meets regularly and has a **Sponsoring Teacher** who (a) makes sure that the agreed-upon number of teens show up for each activity and (b) reviews the activity steps with the teens prior to each session. Possible sources of teens: biology, ecology, or general science classes, future teachers association, ecology club, gifted students/honors club, remedial reading classes. In every case, more teens are recruited and trained than are actually needed. This assures enough teens even when some are absent. Extra teens are paired, and the pair works as a team with their group of six elementary students. Participating teens tend to gain self-confidence and develop a new appreciation for teachers.
2. **Scheduling activities** - Some projects have teens conduct the same activity with two different groups of elementary children at the same site, one after the other, each day they are scheduled to volunteer. This back-to-back schedule is used when the expense of bus transportation to and from the elementary school is high (e.g., the cost is more easily justified when it enables the teens to reach 120 vs. 60 kids) and/or when there does not seem to be a problem getting teens signed-out of one more high school class (i.e., away from the high school for an additional hour). This type of schedule requires teens to miss 2 or 3 high school class sessions (about 2 1/2 hours).

   A second type of schedule — where a group of trained high schoolers conducts each activity with only one group of children — only requires the high schoolers to be involved for slightly less time. If the high school is located within walking distance of the elementary school, the total time commitment is less than two hours for each activity (5 minutes to review the activity steps, 15 minutes to get to the elementary school, 1 hour activity, 10 minutes debriefing, and 15 minutes to walk back to the high school). Therefore, for each activity, teens will miss two high school class sessions.
3. **Student Permission Slips and Sign-out Procedures** - These vary with each school district. Because most are school requirements/

procedures, Project Coordinators have left them largely to the high school sponsor. The Sponsoring Teacher takes the responsibility of determining what forms are needed, and distributes them to and collects them from participating teens. (An example is shown on page 40.) The one exception to this is insurance and/or liability forms. Louisville has students complete a "Volunteer Insurance Form" so that they can be covered by the Museum's policy in case of an accident. (See page A11.) Another approach to this issue is reflected in Denver's Memorandum of Agreement. (See pages A36 and A37.)

4. **Transportation -** If high schools are located within a block or two of the elementary schools, teens can walk there in 10-15 minutes. Then transportation is not an issue. (But, Helga Burre warns to be aware of the fact that high schoolers, at least in Boston, walk **very** slowly. It's definitely not cool to hurry!)

   Transportation has been handled in different ways in Ft. Lauderdale and Louisville. The Louisville Museum of History and Science, as primary project sponsor, decided to contract the transportation of teens to a private bus company and thereby allocate full responsibility (and liability) for transportation to that company. The buses pick up the teens and their museum supervisor at the high school at the appointed time, take them to the elementary school, wait while they conduct an activity with two groups (scheduled back-to-back), and take them back to the high school about two hours later. The bus contract costs about $10,000 per year and is, needless to say, a major expense. In the summertime, a staff-driven van is provided by the co-sponsoring JTPA program.

   In Ft. Lauderdale, transportation is the responsibility and expense of the sponsoring high school and is handled differently in each school. Sometimes school activity buses are used; other times, there are parents, students, or teachers driving cars. When the transportation is provided by the school district, the district's insurance policy applies, and this, obviously, is the best situation.

5. **Length of Commitment -** Each project has found variation in the extent of commitment that the high schools are prepared to make. In some cases, the trained teens conduct one activity per month with the same group of 4th graders for 4 to 5 months. In other cases, the teens work with two groups scheduled back-to-back, monthly, throughout the school year. And, in the most intensive schedules, the teens are scheduled to work with elementary school children once each week; by the end of the semester, they have worked with children from three or four different elementary schools. By outlining a couple of different possible schedules, you could present the high school principal and teacher with different options, and they could select one that will fit best with their school's schedule.

6. **Rewards/benefits for teens -** There are some basic questions that the Project Coordinator and Sponsoring Teacher(s) need to reach agreement on before starting: Is it a goal of this project to give the teens an opportunity to experience what it is like to commit to and

perform a community service as a volunteer? Will teen participation be a completely voluntary decision, left up to the teens? Or, will this only create great problems due to very sporadic attendance? Some experienced Project Coordinators would recommend voluntary participation because they have had problems with teens who were conscripted into participating — with negative experiences for both the teens and the elementary children in their group.

Will participating teens get a grade for doing this? Louisville Project Coordinators argue that grades increase dependability and performance of teens (two qualities that they need to depend on); while Ft. Lauderdale's Project Coordinators argue that it's not really a volunteer commitment if the teens get "paid" with grades.

Many of the same thank you's that endear adult volunteers to these projects and "their kids" also warm the hearts of teens (see pages 57 and 58).

In addition teen volunteers have been offered and appreciated letters of recommendation (to colleges or potential employers), pizza parties, earning points for a community-service graduation requirement or award, and free passes to movies, programs or field trips.

All Project Coordinators who have worked with teens have collected many anecdotes of shy, insecure teens who have gained much self-confidence and self-esteem through their experiences in this program. Some also cite the value of teens getting outdoors and interacting with nature as a program benefit for this generation of "children of the mall".

Training and Coaching Teen Volunteers

As with adult volunteers, the most important part of the training workshop is going outside and **doing the scheduled activities** with them **in an exemplary fashion** so that they have experienced the entire activity, have a clear image of their role, and know that to succeed they merely need to mimic what their training leader did with them. The primary difference between adult and teen training workshops is that **teens need more training sessions**. The exact length of each training workshop will vary based on your situation. Page 44 contains an agenda for a B.O.N.U.S. Training Workshop and a list of additional training and coaching sessions that are provided to the B.O.N.U.S. high school volunteers.

In Boston and Louisville, the high school students are trained during their regular 50 minutes to 1-hour class sessions. For example, if Ms. Smith is the Sponsoring Teacher and volunteers will come from her 3rd and 4th period general science classes, then the Project Coordinator goes to those 3rd and 4th period classes to do the training **with Ms. Smith**. An outline of topics and activities included in Boston's three- session training sequence is printed on page 45.

B.O.N.U.S. Training Workshop

Conducted by Project Coordinator and experienced volunteers
with Sponsoring Teacher participating in section I

1:30 - 4 PM - Plantation High School

[NOTE: Times for this workshop have varied. It has been scheduled either after school, late in the school day so students only miss their last class, or during the block of time that they will normally go to the elementary school to conduct the outdoor activities. Teens are required to sign-out from missed high school classes.]

I.	Introductions and overview of BONUS	- 5 minutes
	slide show	- 10 minutes
	commitment involved; logistics of going to elementary school	- 10 minutes
II.	Go outside and do an activity	
	How to use a magnifier (See page A-12 in Appendices.)	- 5 minutes
	"Envirolopes & Observation Game"	- 40 minutes
	Using the OBIS activity card, everyone prepares their own "Envirolopes" 3 x 5 index card listing the challenge, action steps, questions, and game steps for the activity with the trainers leading them step-by-step. (These notes or "help cards" are used by the teens to help them remember what to do as they conduct the activity. See page A-13 for a sample "help card".)	- 20 minutes
III.	Lemonade Break	
IV.	Stay outside and do second activity	
	"Super Soil"	- 50 minutes
	Trainers distribute printed "Super Soil", "help cards" and review the card with challenge, action steps, questions for the activity, and time allocated for each.	
V.	Remind teens of their commitment and what's expected of them. Re-explain volunteer commitment and give teens who don't want to participate/don't think they can handle it, a chance to opt out. Sign-out training packets to committed volunteers and review contents with them.	- 5 minutes
VI.	Review and answer questions about teaching techniques and how to handle behavior problems as time permits.	
VII.	Collect magnifying lenses and name tags. Sponsoring Teacher keeps these and redistributes them prior to each activity.	

Additional Training and Coaching Steps for B.O.N.U.S. High School Volunteers

During regular class time or at a club meeting:

Sponsoring Teacher reviews schedule and procedure for each activity day, distributes and collects all required sign-outs and permission slips, firms up exactly who will be volunteering, and makes transportation arrangements.

Just prior to each activity:

Sponsoring Teacher or a lead-student reminds teens to bring their "help card" for the scheduled activity and to meet at the appointed time and place, and reviews the challenge, action steps, and discussion questions with the group. Magnifiers and name tags are re-distributed.

At the elementary school:

Teens or a mix of teen and adult volunteers arrive at the appointed time. Each Volunteer conducts the activity with his/her first group of six kids. Those children go back inside. The volunteers discuss "how it went", exchange tips and suggestions on things that went especially well for them and have chances to ask questions.

[NOTE: Interactions between teens and adult volunteers during this break can be especially heartening -- with teens giving the adults good suggestions and vice versa.]

Then the volunteers conduct the activity again with a second group. As soon as materials kits are cleaned and re-stocked, everyone leaves.

Later in the season:

A second training workshop is scheduled after "Envirolopes" and "Super Soil" have been done. At the second workshop, the teens go outdoors and do the three remaining activities.

Teen/Elementary Teaching Partnerships - High School Training Sessions

Session 1 - Introduction and overview of program
Slide Show
Commitment Involved and Logistics
Permission and sign-out requirements
Name tags and magnifying lenses—distributed and how to use lenses lesson conducted (See page A-12 in Appendices.)

Session 2 - Go outside and do first scheduled activity.
Teacher observes teens to learn how they behave in this setting and how comfortable they seem with outdoor hands-on inquiry learning.

Session 3 - Teacher divides teens into pairs - with most and least dependable kids paired together. (These pairs share materials and work together during the training as well as working as a team in conducting the activities. One pair works with each group of six elementary children.)
Review logistics and commitment.
Teens either commit to volunteering to work with elementary children or opt out of that commitment.
[NOTE: Even those who opt out continue to participate in training sessions with the rest of their class. But when volunteers go to the elementary school, they go to the library or stay at the high school with another teacher and do an alternate assignment.]
Review safety procedures, teaching techniques and tips on how to handle behavior problems.
(Instead of having the teens each prepare their own "help card" [See page A-13.], the reminders about the challenge, action steps, and discussion questions are placed in the materials kits.)
Answer questions.

Subsequent preparation and coaching steps are similar to those used in the B.O.N.U.S. program (see page 44). At intervals of two to four weeks, teens experience a new activity in a training workshop led by the Project Coordinator and Sponsoring Teacher and then take their groups of elementary students out to do that activity. Depending on the scheduling constraints, a high school and elementary school work together for a sequence of four to seven activities. (Since lunch follows the 4th period, the teens miss one class—either 3rd or 4th in addition to their science class—each time they go to the elementary school, and are back into their regular school schedule just in time to eat.)

Louisville's program has a much more extensive training program. Their Project Coordinator conducts four hour-long training sessions before the teens begin working with the elementary children. Additional training time is spent on leadership skills, how to read OBIS activity cards, characteristics of young children, and teaching techniques. Louisville has also used three-hour Saturday training sessions (including pizza) and found them to work very well. The Saturday format eliminates the hassles of getting teens released from classes during the school day.

Louisville's Summer Program with JTPA

As mentioned previously, Louisville's summertime Urban Ecology program is co-sponsored by the city's Job Training Partnership Act

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(JTPA) program. (JTPA is a federally-funded program designed to give teens from economically disadvantaged families opportunities to obtain job-training and employment experience. Since JTPA teens are paid, this is a summer job, not a volunteer situation.) JTPA teens are trained by the Urban Ecology project staff and work with small groups of 8-11 year-olds at city recreation center and day camp sites.

To begin setting up this cooperative venture, Urban Ecology project leaders met with JTPA program administrators in January. First, each side described the purpose, requirements, and design of their program to the other, and common goals were defined. Then they focused on the six logistical and organizational considerations on pages 41-43 and agreed on a program design that would work well for both sides.

As teens were recruited for the summer program, the JTPA staff took on the responsibility of identifying teens that had the prerequisite interest in and aptitude to work outdoors with young children (as opposed to teens who would be better placed in office jobs or on maintenance crews).

Because JTPA training and work schedules must follow federally and state mandated guidelines, the training workshops that had been conducted with teens during the school year had to be revised. But the final training schedule contained all the elements of the school-year sessions. JTPA teens are available for longer blocks of time than teens are during the school year, so in addition to working outdoors with the children, the summer teens got involved in the preparation and maintenance of the kits of materials used in conducting the activities.

Assembling Materials and Supplies

- **To identify and acquire instructional materials at the lowest possible cost.**
- **To enable volunteers to package and circulate the materials.**

Before involving volunteers in the preparation of materials, we had to decide exactly what materials we needed. A few of us read carefully each of the activities selected for the spring pilot test and made a list of everything a volunteer and six children would need to do each activity. Then each list was checked for completeness by a second person.

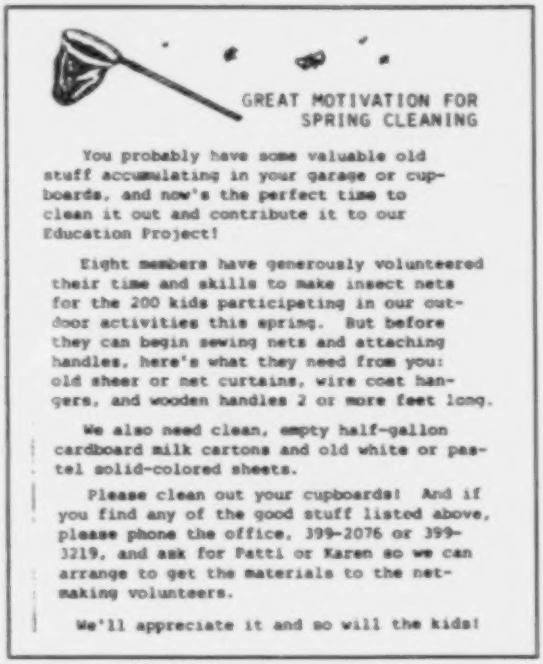
Next we made a master chart of items that needed to be purchased, scrounged, and handmade for each of the spring activities. By comparing costs, we found that some items (e.g., magnifying lenses and trowels) could be purchased most cheaply from Delta Education, Inc., while others (e.g. medicine droppers) were less expensive at the local supermarket. A few things, like OBIS *Lawn Guides*, had to be ordered directly from the publisher. When there was a choice of purchasing ready-made materials or having volunteers make them from scrounged or purchased stuff, we opted for the handmade option. In the case of insect nets, the financial benefits were very obvious: ready-made $7.12 + shipping, handmade $1.08 each.

To amass the materials for these handmade items, we turned to our members once again via newsletter ads and articles.

Our members have never let us down! When our supply of sheer curtains, coat hangers, or milk cartons runs low, we just advertise our needs. (We purchase wooden dowels for net handles, because recycled broom handles seem to be rare.)

Once the raw materials had been collected, we began phoning volunteers who'd indicated a willingness to construct materials (see Materials Assistants/Volunteers' job description and Volunteer Information Form, page 32). In working with our materials volunteers we practice the same **basic principles that guide our recruitment and training** of kid-volunteers:

- we ask for their participation by phone in a simple and direct way, giving them a choice of (usually two) tasks;
- we provide appropriate training and support to enable success, and
- we give volunteers opportunities to select a time and place to work that's most convenient for them.



GREAT MOTIVATION FOR
SPRING CLEANING

You probably have some valuable old stuff accumulating in your garage or cupboards, and now's the perfect time to clean it out and contribute it to our Education Project!

Eight members have generously volunteered their time and skills to make insect nets for the 200 kids participating in our outdoor activities this spring. But before they can begin sewing nets and attaching handles, here's what they need from you: old sheer or net curtains, wire coat hangers, and wooden handles 2 or more feet long.

We also need clean, empty half-gallon cardboard milk cartons and old white or pastel solid-colored sheets.

Please clean out your cupboards! And if you find any of the good stuff listed above, please phone the office, 399-2076 or 399-3219, and ask for Patti or Karen so we can arrange to get the materials to the net-making volunteers.

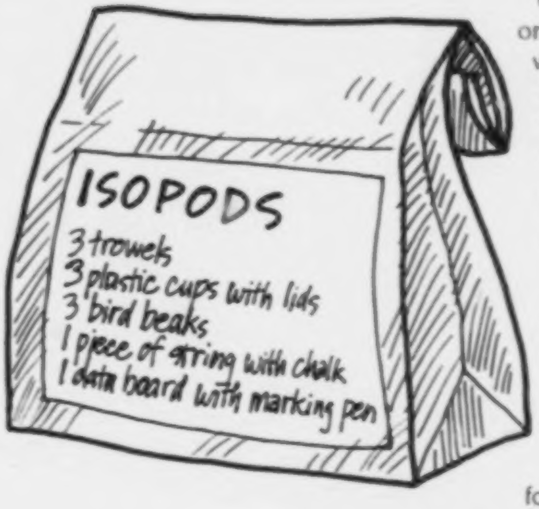
We'll appreciate it and so will the kids!

For example, a woman caring for a home-bound aunt may choose to sew bags for insect nets at home during the day, while a couple of young professionals may want to get together in the evening to build observation trays out of recycled milk cartons. In the first case, someone will have to deliver the materials to the woman's home; in the second, one of the volunteers can pick up everything from our central office on his way home from work. In both cases, we **provide a finished sample of the item** to be constructed, **printed directions** from the OBIS activity, and a **phone number** for questions. (The Materials Appendices contain examples of instructions for materials volunteers. See especially pages M5 through M13.) We also agree on a date for completion of the items and determine how we will get them back.

We've learned **not to assume** we know what people want to do, but to ask and listen to what they tell us. A very bright young person who has a hectic schedule and much responsibility at work may choose the most mundane, repetitive task and enjoy doing it. On the other hand, someone who has performed simple tasks in the past may be capable and ready to take on something more complex.

Assembling the Kits

The final step in materials preparation is to put together the "kit" which includes everything a volunteer will need to do the activity with six children. A "kit" is a bag or box — any container that is the correct size to hold everything — with a label on the side that lists the contents.



ISOPODS
3 trowels
3 plastic cups with lids
3 bird beaks
1 piece of string with chalk
1 data board with marking pen

Once we have all the parts ready, the volunteer leader or staff member in charge schedules two to three volunteers to come to the office to assemble the kits. By its very nature, this is a more social, group activity which, in our case, is done weekday mornings by a group of retired people and homemakers. But it might equally well be taken over by high school students after school or employed people in the evenings.

Our materials volunteers have tended to become specialists — getting to know what's in the "Isopod" and "Ants" kits and sticking with the preparation of them, or learning a good way to construct the rims and handles for insect nets and wanting to continue doing that job. Leaders have emerged and have become the supervisors and quality control people for their working groups.

Re-supplying the Kits

Once the kits are used and returned to the office, they need to be checked. Consumable items and damaged or missing items must be re-supplied. This task is also performed by materials volunteers in the office, as described above.

To facilitate all this, seven sets of metal shelves line the walls of our office, and a conference table and chairs sit in the middle. Since we're on the second floor, the kid volunteers or delivery volunteers get a lot of exercise when they come to check out or return kits. Ideally, the office would be on the first floor with a door that opened onto a parking space.

Preparing and Checking out Volunteer Training Portfolios

Our work and storage area is also the repository for our supply of OBIS cards. Prior to the training workshops for kid volunteers, materials volunteers collate the OBIS cards and other hand-outs and assemble the two-pocket portfolios for each kid-volunteer. See pages A14 through A31 in the Appendices for copies of all the hand-outs.) Materials volunteers also serve as librarians, checking out the portfolios at the workshops and checking them in at the end of the season. (Page A11 shows a sample sign-out card.)

Summary

Packets of printed materials for kid volunteers and kits of materials for children to use in doing each activity are assembled by materials volunteers in our office. By scrounging, by using volunteers to make many items, and by purchasing other essentials from the least expensive supplier, we have been able to keep our materials costs to a minimum.

We've come a long way since the project volunteers in Denver assembled their first kits. The main lessons we've learned are set forth in the extensive **Materials Appendices** beginning on page M1. There you'll find our "four Cardinal Rules", a variety of suggestions for packaging kits and storing them, and "recipes" listing what to put in each kit for one volunteer and six children.*

Additional Ideas Regarding Materials Volunteers

Each city has found, as we did in Denver, that a **separate set of volunteers** is needed for constructing and maintaining the materials. In both Ft. Lauderdale and Seattle, an exceptional volunteer has taken on the lead responsibility for organizing and maintaining the kits. These outstanding leaders are experts at scrounging, identifying sources for every little item that's needed, and delegating tasks out to other materials volunteers.

Each city has found materials volunteers in different places using different techniques. But, in every case, the key to finding these people has been to **ask**. Generous people have pitched in all across the country. You may not have in your community the 4th grade mom in Texas who sewed 18 insect nets with her arm in a cast; or the five Prescott Audubon members who responded to a request for help that was made during the Audubon monthly program and walked to their cars with loads of dowels, coat hangers, sheer curtains and instructions ready to make 30 insect nets; or the retired man in Denver who loves to drive around town and meet new people and would run some errands for us anytime we asked. But, you undoubtedly do have dozens of similar folks who are eager to contribute. (See pages 21, 30, 33, 37 and 38 for some suggestions about where and how to find volunteers.)

A Word about Magnifying Lenses

Magnifying lenses play a special role in our projects: they're the "badge" that makes each child and volunteer an official part of the participating group; they're the thing that holds the string necklace and the name tag that reminds everyone of your name; they're the tool that helps you see tiny, fascinating parts of leaves and feathers and bugs; they're the graduation gift that you get to take home after you've participated in all the activities; and they can also be the most annoying things! Lots of volunteers have spent **hours** untangling magnifying lens strings. Just imagine how knotted the strings from 30 lenses can get when they're all tossed into the same paper bag. Be sure to **decide on** a good **system for handling your lens necklaces before you begin!**

Some options: In Texas, each group's lenses have been hung on a separate hanger and stored in the teacher's classroom closet; in Denver the long strings from the six lenses for each group have been tied with a loose knot and the bag with all the lenses has been given to the host site staff person for safe keeping; and in several cities each child has wrapped his necklace around the lens handle and each group's lenses have been stored in a separate bag at the site.

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* For your convenience, magnifying lenses, *Lawn Guides* and other materials are available from NAAEE. For a current price list and order form, phone or fax 513-676-2514.

Conducting the Pilot Test and Evaluating the Results

- **To find out how the spring program we had put together would work from the perspectives of children, host sites, volunteers.**

As March arrived and all the pieces of our Project started to fall into place, it was hard to tell whether excitement or nervousness was the dominant emotion. Certainly both were evident as we got set to launch our experiment. We knew what we wanted to learn from the pilot test (page 20) and were now about to get the answers.

The week before our agreed on starting date, we **confirmed all arrangements and schedules**. We mailed each host site the blank name tags for their children and a list of suggestions to use in preparing the name tags and in introducing the children to the first activity. (See page A38 in the Appendices.) We also checked with each team to make sure that all team members were planning to conduct the same activity — one that would be appropriate for the predicted weather conditions. Then we double checked to make sure that we had the kits and magnifying lenses ready for each team. (The central coordination was done by the Project Coordinator, but volunteers helped with the phoning and checking.)

Volunteer Arrival Time and Getting Ready to Do the Activity

On the date scheduled for the first activity, the volunteers arrived at their site early. Most teams decided to **gather 1/2 hour early to get organized**. They checked in at the main office and let the site staff know that they'd be out getting things ready. In the next 20 minutes, the volunteers:

- found good spots where the day's activity could be done, and made sure they had enough areas so that each volunteer and group of six children could have a separate territory in which to do the activity. (We have found that the success of each activity depends on having **enough natural resources** — e.g. an active ant hill for each pair of children, or enough damp leaves for the youngsters to search through, or at least three or four kinds of plants with different flowers — and having a **well-defined working area** for "my six kids" so that I can easily keep an eye on them and call them together when needed, yet allow them to freely explore and investigate with their partner.)
- each got his/her kit, checked the materials inside and reviewed how each item was used in the activity.
- each took the set of six magnifying lenses for the youngsters.

Then the volunteer team proceeded to the appointed place and met their children.

Conducting the Activity

Following introductions, each volunteer took his/her group to a separate area and, sitting in a small circle, got started. Each student attached his name tag to his magnifying lens necklace and each volunteer wore a name tag, so learning names was easy. Each volunteer taught his/her six youngsters how to use the magnifying lens. (See page A12.) Then the volunteers conducted the activity according to the OBIS card.

The **host site staff member** in charge **circulated** from group to group observing and participating in the activity. We've found that she rarely, if ever, has to exercise her role as **disciplinarian**, because the children are so interested and involved in the activity. And in the last three years, we only know of a few cases where the staff has had to take care of minor first aid problems. We feel it is essential to have the site's paid staff available to handle such **first aid problems** because the staff members are familiar with the rules and regulations for their particular agency and they know the children well. In addition to the required responsibilities of disciplinarian and first aid/emergency person, the site staff members circulated doing the following:

- **thinking of appropriate follow-up activities** based on the children's discoveries and reactions to the activity.
- **evaluating** the program and the children's response to it. (See page A43 in the Appendices for a sample form.)
- **notifying each volunteer when there is ten minutes left,** so he/she has time to conclude the discussion and get the children to clean up.

The **project coordinator** also circulated and observed. If the host site staff member or a volunteer seemed at a loss regarding his/her role, the coordinator offered gentle reminders and/or stuck with that person for a while demonstrating the role and encouraging the other person to continue.

When the group completed the day's activity, all the children returned to the designated place, turned in their magnifying lenses (so they'd be ready to use again for the next activity), and said goodbye to their volunteer leader.

Wrapping Up the Activity

We've found that the best time to **get feedback from the volunteers is immediately following each activity**. Everything's fresh in their minds. By filling out an evaluation form together, the teammates get a chance to compare their experiences, share any frustrations, and pick up ideas from one another. Within 15 or 20 minutes, the group has reached closure, agreed on the activity they will do next time, and loaded the kits into someone's car (for return to the office).

Evaluating the Pilot Test

To enable us to evaluate the pilot test, we collected data from six perspectives. As previously mentioned, the **kid-volunteers** (1) and **host site** staff (2) members filled out a form to assess each activity. A third form was used by **Education Committee members** (3) to record the observations they made while watching an activity in progress. (The form helped us determine whether the children, volunteers and staff members were doing the kinds of things we had expected during the activities.)

At the end of the spring activities, we got feedback from the **children** (4) by way of a simple questionnaire or from the one-paragraph compositions they wrote telling what they thought of the program. A half-hour **meeting with the administrator and the participating staff member(s) at each host site** (5) gave us a chance to discuss their views of the program's strengths and weaknesses and their recommended changes. And finally, we brought the **kid-volunteers and the materials volunteers** together for a wrap-up **celebration and evaluation meeting** (6). In small groups we discussed their recommendations, and individually, they filled out forms indicating what they'd "like to do next." The Appendix contains copies of all the forms and protocols used in this assessment. See pages A42 through A50.

Two other kinds of communication went on during the pilot test that we think were important. We **mailed messages** to the kid-volunteers twice to report on the experiences of teams at several sites, and to let them know how things were going in general. These mailings also contained additional details about materials and tips we'd learned as we gained experience with some of the activities. We tried to reiterate the value of their input and remind them that they were part of a larger effort. In addition, we informed Audubon members of our efforts via the monthly **newsletter. Photographs** showing kids and volunteers in action made the project real. By keeping our members apprised of our monthly progress, we laid the groundwork for more members to become involved as volunteers and as financial supporters.

All this may strike you as a lot of forms, meetings, and mailings, but we felt it was important to give everyone involved chances to express his/her views about the program both verbally and in writing. By carefully monitoring the pilot test, we were able to identify some problems before they festered, clarify our expectations, provide assistance as needed, and insure a more positive outcome.

Finally, we **compiled all the data and summarized the results** in a report. After reading and reflecting on this report, the Education Committee conducted a **Pilot Test Post-Mortem** reviewing previous decisions on program design and delivery and reaching consensus on the following:

- The program's objectives and criteria for selecting activities were valid and should remain unchanged.
- Additional OBIS activities should be identified so we could continue the program **year-round**. We decided that it was important for youngsters to get outdoors and explore in every season of the year so that they would not get distorted views (e.g. the only times living things are here is in seasons with warm weather). (Seepages A21 through A25.)
- Materials kits should be improved using the suggestions from pilot volunteers, and the concept of materials volunteers should be expanded. (It had worked well, and the kid-volunteers were thrilled to have kits provided, ready for their use.)

- The magnifying lenses on string necklaces plus name tags had worked well (once we figured out that the necklaces for each group needed to be tied in a big loose knot or hung from a peg to prevent all the strings from tangling together in massive knots between activities). We would continue to provide the inexpensive lenses and give them to youngsters who participated regularly at the end of the program year.
- We would narrow our focus to 4th and 5th graders (because the "chemistry" between volunteers and children of those ages seemed best), but continue to serve 8-12 year-olds in mixed age groups.
- Because private day care centers seemed to have so few children in our targeted age-range, we decided not to pursue those sites. All other sites had worked well and would be continued.
- We would try to reach as many children as we could by attempting to increase the number of volunteers. The number of volunteers and the time they were available would determine the number of children reached through school, after-school, and Saturday programs.

Summary

We carefully monitored our pilot test and requested feedback from everyone involved. This enabled us to learn about what was going well, find out about trouble-spots, and adjust our approach immediately, when needed.

After reviewing and reflecting on the data, the Education Committee conducted a Pilot Test Post-Mortem, made some revisions in the program, and decided to expand the project to reach more children on a year- round basis.

Role of Project Coordinator

As each new city pilot tested its project, it became clear that the **role of the Project Director or Coordinator is essential.** He/she must walk a delicate tightrope — balancing the role of **model/example-setter** and **coordinator** but NOT creating the image that he/she can or will do everything single-handedly. The coordinator must always be encouraging volunteers to take on more responsibility and facilitating their increased involvement while working for high program quality.

He/she is most likely the only person who knows and can clearly see all aspects of the program. So, as the activities are used for the first time at each pilot site, it becomes his/her responsibility to :

- make sure everyone is ready and planning to do the designated activity at the agreed upon time and date. (Phone calls to teaching volunteers can be made by volunteers using the volunteers' portfolio check-out cards completed at the training workshops. See page A11. The Project Coordinator should speak with the contact/liaison person at each site.)
- greet the volunteers at their site and get them started. (Especially see the list of pre-activity items on page 50.)

- circulate with the host site staff member(s), remind them of their responsibilities (see page 51), collect their evaluation forms and confirm the date of the next activity before they return to the building.
- make sure the volunteers complete their group discussion and evaluation, take responsibility for returning their kits in good condition, and are reminded about their next activity before departing.

Performing these tasks plus handling all the evaluative feedback adds up to a heavy load for the Project Coordinator even during a **small-scale** pilot test, but it is an investment in the program's future. Where Project Coordinators have taken the time to set a pattern and model the oversight and organizational roles that need to be attended to prior to, during, and at the end of each activity, they have been most successful in selecting "team leaders" from their experienced volunteers to fill that role in future years. (See page A51 for team leader job description.) By delegating this leadership role to team leaders at sites familiar with the program, the Project Director can turn his/her attention to the supervision of new volunteers and sites and to solving special problems that crop up as the program grows. In Prescott, the team leaders have even taken on the role of making phone calls to each volunteer at the end of the year to get their volunteers' suggestions for improvement, thank them for their participation, and encourage their continued involvement.

Expanding the Project to Reach More Children

- **To create methods for managing the project as it involves more volunteers, more sites and more materials.**

Three factors determine the number of youngsters that we can reach:

- the number of volunteers — how many new ones we can recruit and train, and how many existing ones we can retain;
- the inventory of materials available for volunteers to use; and
- volunteer leadership and/or paid staff available to coordinate and maintain the quality of the program.

We have always had a waiting list of sites who want to host our project and, as soon as we have the ability to expand, we allocate volunteers to those sites.

In this chapter we'll discuss the ways we have dealt with these factors to expand our reach from 250 to over 2,000 children per year.

Recruiting Additional Volunteers

In the first three years our main means for identifying new volunteers were our phone-banks with members calling other members. We modified the phone script from time to time, but the procedure remained very similar to the one first used during our needs assessment (see page 18). Each August and March, approximately two or three weeks before our fall and spring volunteer training workshops, we took an evening to phone and speak with 150-200 members. We typically recruited 40-50 new behind-the-scenes volunteers and kid-volunteers and identified another 30-40 who wanted to get involved at a later date.

In January, right before our winter training workshop, we sent a brightly-colored bulk-mailed postcard to all DAS members. In response, 10-15 people usually called the office and joined in our efforts. Articles and photos of the project appeared in our newsletter throughout the year, and each edition resulted in two or three calls from members who wanted to contribute to the project in one way or another.

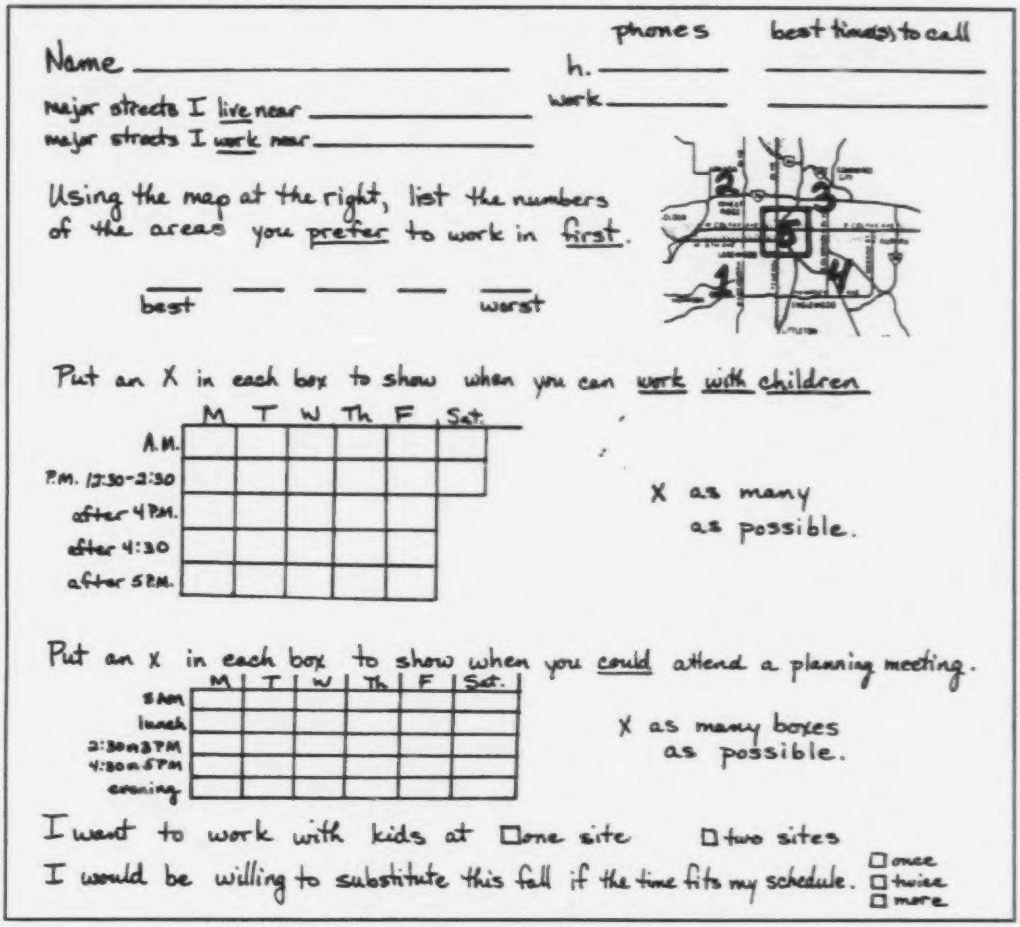
As the project grew, the number of volunteers recruited by word-of-mouth grew. Volunteers talked their co-workers or neighbors into joining in the effort. Since these people had heard their friends talk about their experiences with the project, they arrived with much enthusiasm and a very realistic view of what they'd be doing.

In our fourth year, we experimented with a couple of **new methods for adding volunteers**. Because of their success, we'll undoubtedly continue recruitment of volunteers through Parent-Teacher Organizations (PTA's) and Optimist Clubs. Each fall our large, central school district holds a PTA resource fair at which PTA officers from scores of schools get new ideas for programs they might sponsor. By having a display, demonstration (e.g. of pillbug and sowbug races), and sign-up, we've been able to identify new schools at which the PTA wants to help get our project established.

Another way PTA's have gotten involved is via requests from the school's principal and/or teacher(s). When a school asks to begin hosting the project or to add more classes to the project, we explain that we'd like to, but that we cannot guarantee that we will be able to recruit the required number of volunteers. If the schools want to insure their participation, they may choose to recruit their own volunteers (which they usually do through the PTA) and send those volunteers to our workshops, etc. We reinforce this idea on the Host Site Application Form and the form that each participating school is asked to fill out in June regarding their participation during the next school year. (See pages A32 and A34.)

One of our kid-volunteers talked to his Optimist Club about our project. As a result, the club has made donations and recruited volunteers to help conduct the activities at one of the schools in their area. We are looking forward to acquainting more Optimist groups with our project and hope to gain similar support for other schools.

All new kid-volunteers are required to attend a three-hour training workshop before they are assigned to a team and begin working with youngsters. The workshops continue to follow the format of the spring pilot workshop with one major change: experienced volunteers now lead newcomers in doing the activities for the coming season. At the end of each workshop, we collect from each volunteer a completed schedule and site-preference form. By using this information, we are able to fit the newly trained volunteers into existing or new teams with adequate consideration for their preferences.



phones best time(s) to call

Name ____________ h. ________ ________

major streets I live near ____________ work ________ ________

major streets I work near ____________

Using the map at the right, list the numbers of the areas you prefer to work in first.

___ best ___ ___ ___ ___ worst

Put an X in each box to show when you can work with children

	M	T	W	Th	F	Sat.
A.M.						
P.M. 12:30-2:30						
after 4 P.M.						
after 4:30						
after 5 P.M.						

X as many as possible.

Put an x in each box to show when you could attend a planning meeting.

	M	T	W	Th	F	Sat.
8 AM						
lunch						
2:30 or 3 PM						
4:30 or 5 PM						
evening						

X as many boxes as possible.

I want to work with kids at ☐ one site ☐ two sites

I would be willing to substitute this fall if the time fits my schedule. ☐ once ☐ twice ☐ more

Retaining Existing Volunteers

We have had a high retention rate with 75-85 percent of our experienced volunteers continuing from fall to winter and from winter to spring seasons. But our retention rate has dropped to 55 percent in the summer with only slightly more than half of our spring volunteers returning for the fall season. The two reasons most frequently given for leaving the program in any season are changes in work schedule or family responsibilities and poor health or pregnancy. Other reasons have included: moving, marriage, spending volunteer time on other interests, volunteer sites not conveniently located, and not liking the program.

Surveys consistently show that one of the key elements most attractive to volunteers is that they **feel their time is well spent**. They **know what they are expected to do** (via job descriptions and self- evaluation forms), **feel well prepared** (via training workshops and portfolios of printed materials), have the ability to **schedule** their participation at a time that's most **convenient** for them (via three choices of workshops and team planning meetings), and **enjoy** what they're doing.

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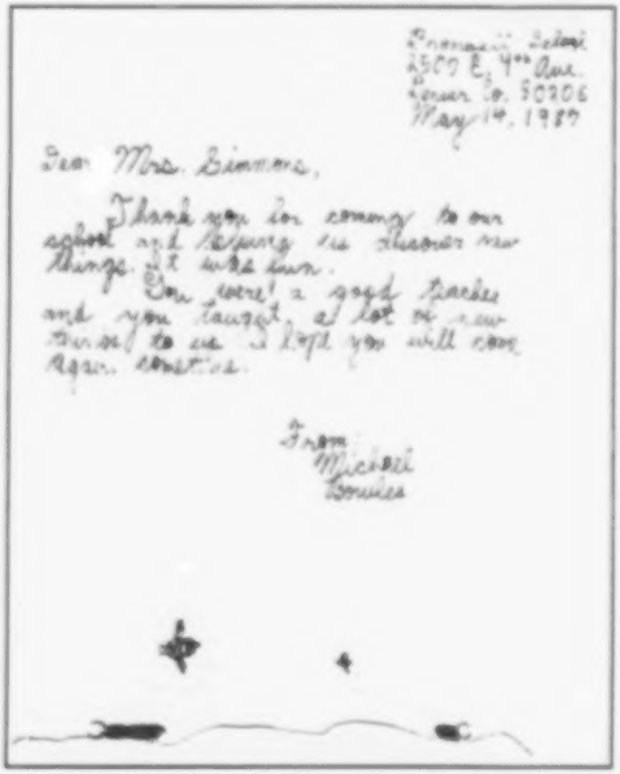
We try to listen carefully to their suggestions for change and eliminate problems and/or tasks that they find undesirable. **Division of labor** is most important. The kid-volunteers want to spend their time with children and think it's wonderful that the kits of materials are provided for them to use. The materials volunteers, on the other hand, don't want to spend five minutes with a bunch of youngsters, but gain a sense of satisfaction constructing kits and enjoy socializing with their work-mates. In response to volunteer feedback, we have added delivery volunteers. This enables retired people who enjoy driving and meeting new people to contribute to the project and relieves an attorney with an office miles across town (for example) from the burden of coming to the Audubon office to pick up the kits for his team.

The biggest pay-off our volunteers receive is the enjoyment and sense of accomplishment they feel as they participate in the project. We also try to **acknowledge their contributions** in three ways:

- verbally — with "thanks" from team leaders, project staff or whoever's in charge of the session they've just participated in.
- in print — by way of recognition in the newsletter or letters sent directly to each volunteer. We extend our appreciation to each volunteer and note the accomplishments of the total project that wouldn't be possible without the collective effort in which each of them plays a part.
- from the youngsters and host site staff member(s) they work with — Once a year we suggest that each site send notes of appreciation to the volunteers that serve them. The majority have their children write notes telling their volunteers what they like about and have learned from the activities — and they warm the hearts of all who see them.



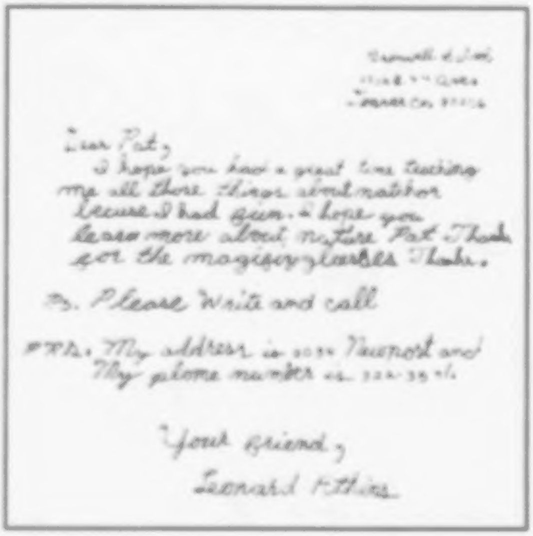
[illegible] School
2500 E. 4th Ave.
Denver Co. 80206
May 14, 1987

Dear Mrs. Simmons,

Thank you for coming to our school and helping us discover new things. It was fun.

You were a good teacher and you taught a lot of new things to us. I hope you will come again sometime.

From
Michael
Bowles



[illegible]
[illegible]
[illegible]

Dear Pat,

I hope you had a great time teaching me all those things about nature because I had fun. I hope you learn more about nature Pat. Thank you for the magnifying glasses. Thanks.

P.S. Please write and call

P.P.S. My address is [illegible] Newport and my phone number is [illegible].

Your friend,
Leonard Atkins

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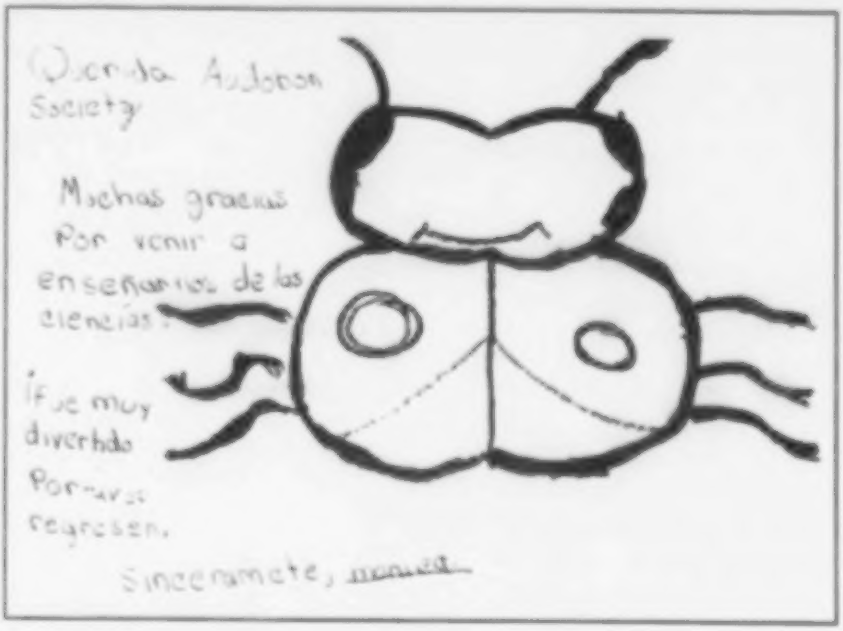


Querida Audobon
Society

Muchas gracias
Por venir a
enseñarnos de las
ciencias!

¡Fue muy
divertido
Porfavor
regresen.

Sinceramete, monica

Then, of course, there are the smiles, hugs, and when-are-you- coming-backs, that spontaneously come from the kids before, during and after each activity.

A couple of times each year we hold **volunteer events** that are primarily social — e.g. dessert parties, after-work receptions. A volunteer-training element may be included (such as searching for spiders with an expert from the museum), but the emphasis is on enabling the volunteers to swap experiences and get acquainted with the other wonderful people who share their interests in youth and nature. So far they've been held at interesting places that spark conversation and curiosity (e.g., a historic downtown hotel, an old mansion). The food and camaraderie make these enjoyable occasions, and we hope a "bonus" for our volunteers.

Enlarging our Inventory of Activities and Kits

With our decision to conduct outdoor activities year-round came the need to identify activities that would work well in the summer, fall, and winter. We again turned to the OBIS materials and used the same procedures that we had used for the spring season to identify activities for the other seasons (see section entitled "Selecting Appropriate Learning Activities", the Materials Appendices, and pages A21 through A25).

For each season we have selected activities that can be used to take the children outdoors to discover and investigate the plants, animals and natural habitats in their neighborhoods. Each site has its own limitations that must be considered in choosing the most appropriate activities from all those on the seasonal lists. For example, one school may have no windows from which birds at feeders can be observed, another site may have a fastidious custodian that cleans away all spider webs and leaf litter. By listing 7 to 20 possible activities for each season, each volunteer team has been able to find at least three activities that will work at their site no matter what the resource limitations.

All the activities meet all our original selection criteria (page 22) with one exception. Winter is our most constraining season. To insure at least three activities that will work well at our most limited sites in the worst weather, we have added a simulation game ("Sound Off!" for 4th graders or "Food Chain Game" for 5th graders). Although these simulation games do not "**directly** involve" the children with plants, animals or habitats in the neighborhood, they do give the youngsters experiences that stimulate thinking about the interactions of organisms they investigate during their other hands-on activities. In addition, they can be conducted indoors, if needed.

The "kits" of materials for each of the selected activities have been assembled following the procedures outlined in the "Assembling Materials and Supplies" section. The materials volunteers prepare additional kits, re-supply used kits and make replacements each season to insure a ready supply for the kid volunteers.

Building Volunteer Leadership

As kid volunteers gain experience with the project and want to assume more responsibility, they may become **"team leaders."** In this capacity, they organize their team's efforts and coordinate those efforts with the whole project via the central office. (See job description on page A51.)

Team leaders are selected based on their ability to work well with children and therefore serve as role-models, their consistency of participation and dependability, their ability to relate well to other volunteers, to lead team discussions, and to communicate with site staff. Team leaders are observed conducting activities with children and receive recommendations from site staff member(s) before being selected.

Experienced volunteers may also expand their participation by **leading activities at training workshops** or by supervising a group of volunteers in preparing materials. In each of these cases, the volunteer gets new experiences, and the project is able to grow as volunteers take over the supervision of additional volunteers.

A note about volunteer supervision and the role of project staff: When "personnel problems" arise with volunteers (e.g., tardiness, below- par performance), volunteer leaders have come to the project staff, reported the situation, and asked the project staff to handle it. The volunteer leaders prefer not to take on such responsibilities and want our paid staff to deal with those tasks.

Providing Adequate Coordination

While we have chosen to hire a staff member to coordinate the participation of all volunteers and host sites, it is conceivable that this responsibility could be handled by a dedicated, experienced volunteer. In either case, the responsibilities include:

Volunteer Coordination

- Recruit, motivate and oversee a volunteer corps adequate to carry out all aspects of the program.
- Organize seasonal workshops for volunteers and periodic meetings with team leaders — making sure the objectives for each session are clearly defined and involving volunteers in the planning, preparation and conduct of each session to the maximum extent possible.

Materials Management

- Maintain inventory and circulate instructional materials assuring that adequate numbers are on hand, at least cost, and with maximum involvement of volunteers.
- Solicit in-kind donations of goods, materials and services from the community.
- Price, order and purchase designated materials.

Scheduling and Record-keeping

- Schedule and coordinate participation of sites and volunteers.
- Collect and account for materials fees from all sites.
- Keep records of all materials, volunteers and sites and provide information for project reports, as needed.

If you choose to hire a coordinator as you expand your project, you will have to raise the money to pay that person, which leads us to the topic of

Raising More Money

In keeping with our philosophy of packaging volunteer tasks so that people specifically interested in certain opportunities can focus their energies on an aspect of the project they find most enjoyable, interesting or worthwhile, we have organized a **group of fund-raising volunteers**. As the nature of our fund-raising task has become more complex, we have been able to involve more volunteers in this endeavor — and hope to continue to do so.

The strategies we use and the sources from which we raise money are set forth in the following section, so will not be repeated here.

Suffice it to say that the fund-raising volunteers draft a plan for the year's effort, and each volunteer works in his/her field of preference (e.g. organizing the members' campaign, researching prospective foundations, meeting with potential donors). Their efforts are coordinated and supported by the project staff.

One additional aspect of our fund-raising operation is worthy of note. From the beginning we have followed **a policy of raising money a year in advance**. This means that, for example, the total amount raised from August 1987 through July 1988 will be used to fund the 1988-89 program. Or, to put it another way, in June-July, 1988, we will evaluate the success of our 87-88 fund-raising effort, total the amount in hand, and finalize our budget and program size for 88-89. We have found this to work well because it allows us to make firm commitments to host sites and project staff before the new school year begins.

Summary

We have been able to reach more children in each of our first three years by recruiting and training new volunteers and by gaining the continued participation of existing volunteers. Our volunteers seem to feel their time is well spent and to enjoy what they do. We try to supplement their intrinsic motivation by extending our genuine thanks and by recognizing their valuable contributions from time to time. To maintain a coordinated, high-quality program, we depend on the leadership of volunteers and the daily oversight and attention-to-detail that our paid staff provides.

More Tips for Recruiting and Working with Volunteers

In each city, the **major limiting factor** for each project's size has proven itself to be the **number of volunteers**. We have described the variety of sources from which projects have recruited volunteers earlier in this section and in the section entitled "Recruiting and Training Volunteers". The two basic techniques that have been the key to success in each city are one-on-one **asking** (either through personal contacts or through mass-operations like a phone-bank calling members) and **getting other organizations or institutions to ask** (such as the PTA, corporation, or service club asking their members; a school district's coordinator of volunteers contacting his/her prospects; or a high school teacher recruiting his/her students).

PTA and/or parent volunteers, used extensively in four cities, come with a unique set of benefits and problems. Almost all of them volunteer for the year because their involvement will benefit their child — and they do not return the following year. The next year's parents have to be trained again starting from scratch. This turnover creates a heavy burden on the project unless the school and PTA will take on the responsibility of recruiting and coordinating the efforts of a new team of volunteers each year. In Texas, one school has integrated the Outdoor Investigations project into their standard operations so well that the PTA automatically identifies a 4th grade parent each year as their team leader. This person then receives a file outlining her responsibilities, and proceeds to recruit all the parents, schedule the workshops and activity dates, and take care of all the coordination with the teachers and project staff. That's an ideal set up. In Arizona, Bob Sullivan finds that the perfect leadership combination is the kind of **PTA leader** that the Texas school has **and** an experienced **Audubon volunteer**. This combination gives a school's leadership team the strength of a parent familiar with the kids and the school plus a nature-lover steeped in the philosophy of the program and the OBIS activities.

Volunteers from diverse sources have also brought strength to the programs in Seattle and Ft. Lauderdale for two reasons. As in the Arizona example, people from different backgrounds bring different skills, interests and perspectives to the project. In addition, there seems to be an ebb and flow in volunteer availability from year-to-year and from one part of the city to another. In one case it may be easier to get teen volunteers or Audubon volunteers, and in another parents or retirees may be more readily available. With more than one source to draw on, the chances of finding enough volunteers each year are greater.

Volunteers who continue to volunteer become very valuable because their understanding of and devotion to the program grows. In most cities, besides filling team leader roles, they've also led activities at training workshops. In Seattle, experienced volunteers **serve on the project steering committee**. And, in Denver, some of the Audubon volunteers who have worked with children for six years, have played a key role in **getting their corporations to contribute financially** to the program. Experienced teen volunteers in Louisville have even **marketed the program** to their former elementary school teachers.

In general, identifying more sites to host programs and selecting activities to add to each city's repertoire of activities has not been a problem. Louisville has had to market their Urban Ecology program more than the others because it is based on a substantial fee (see page 70 for more details). But even in Louisville identifying host sites has not been a major problem.

Activities for Every Season of the Year

The activities you choose to use as you expand your program will primarily depend on the resources at your neighborhood sites and your climate. The Site Inventory Checklist on pages M37 and M39 should help you determine which activities will work for you. You should also consider your local weather conditions as you plan your activity schedule, avoiding the wettest or otherwise most foreboding weeks/months. For example, if raining and flooding typically plague your area in March, schedule your activities in October, November, January, February and April and avoid your wettest month. You will find several activities on the recommended list (pages M35 and M36) that work in (in fact, **require**) cold weather. So rather than avoiding the cold, just prepare for it by reminding everyone to dress warmly and borrowing extra coats from the "lost and found" for children who need them. Every city has found that it's best to **avoid** scheduling activities with children in September, December, and May (or late May) because of conflicts with the start and finish of the school year and the holidays. In addition, cities have found it much easier to schedule an extra "rain date" (that may never be used) for each site and team of volunteers, rather than having to get everyone to agree on an additional date for a make- up activity after an activity has been canceled due to rotten weather.

Quality Control

Quality control has become an issue as each city's project has expanded. To assist volunteers in answering for themselves the question "How am I doing?" or "Am I doing what I'm supposed to be doing?" we've included a copy of our Volunteer Self-Evaluation Checklist on pages A19 and A20. Another tool, the Component Checklist (pages A52 and A53), gives project staff and/or team leaders a vehicle for assessing whether the program in action at any site "looks right". We have used it to identify the "best practices" and areas most in need of improvement at a site, and to initiate a discussion with the team of volunteers or with the host site staff after observing an activity.

Outside evaluations of programs in several cities were conducted in 1990-91 and 1992-94. While each of these studies was conducted by paid professionals, they had different goals. The first documented the dissemination of Denver's model project and included cross-site comparisons. Many local officials, volunteers, children, and staff people were interviewed and surveyed to learn about the strengths and weaknesses of each project. The second study was designed to assess the impact of projects in 3 cities on participating students and teachers. The first was descriptive; the second, more quantitative. Both have provided results that project directors have found useful in planning improvements, promoting their projects, and raising funds to support them. To learn more about these evaluations, contact NAAEE.

Getting Financial Backing

- **To determine the financial needs of the project you design, and**
- **To raise enough money to meet the budget.**

Depending on your early decisions about the size and scope of the project you want to launch, you'll need a larger or smaller amount of money to fund your effort. Our budget includes categories for:

Instructional Materials
Volunteer Training and Materials
P.R./Promotion
Mileage/Travel
Office Supplies
Office (rent, utilities, phone)
Insurance (accident, liability and office/property)
Staff Salary, Benefits, and Payroll Taxes
Contingency

The proposed budget varies each year depending on the number of children we plan to reach and the number of volunteers we plan to support. (Sample budgets for two different-sized programs may be found on pages A7 and A8.)

If you decide to start a program with a very small pilot test — of one site and one team of volunteers, your costs may be less than $100. That amount may be available in your organization's existing budget, may be readily contributed by your members, or may be raised from a "business sponsor" near your site.

Denver Audubon's first Urban Education Project budget (in 1984) was $34,000 and included salary for one full-time staff member ("helmsperson"). In our organization's first 15 years, almost all our programs had been for members and/or on such a small scale that, with two exceptions, they were supported within the organization by dues, registration fees, an annual appeal mailed to members, a large birdseed sale, and a bird-a-thon.

With plans to launch a community outreach project for children with paid staff, we found it necessary to raise funds from new sources. This has been a sometimes exciting, sometimes ominous new venture for us. Our experiences have taught us a lot, and we're still learning.

We've tapped a variety of sources:

- **Our Members** — We used a letter with a return self-addressed envelope and a follow-up phone call to request contributions from our 2,940 members. Seventy-seven volunteers participated in the phone-a- thon, and we spoke with 704 members. Altogether we received donations from 330, with many people contributing at the $20 level so they could receive an autographed copy of the new Denver's Winter Birds poster. (A set of materials used in this campaign are included in the Appendices, pages A54 through A63.)
- **In-Kind Contributions** from businesses and agencies — We get food and drink free or at reduced prices from local merchants for volunteer events (e.g., the local pizza parlor donates pizzas for our phone-a-thons). We receive 10 percent to 45 percent discounts on purchases from office and educational supply houses. Government agencies have printed brochures and provided meeting space and even office space for our project free of charge. Our office space is provided rent-free by our public school system. In most cases, these contributions were acquired very simply by asking, but in some cases they involved more lengthy negotiations.
- **Foundations** — The large majority of our start-up costs have been paid by foundation grants. The data from our needs assessment provided a solid basis for major proposals. Since there are many references on foundations and proposal writing available in most public and college libraries, we will not attempt to cover those topics here. Suffice it to say that we have found private and governmental foundations both locally and nationally willing to fund this project because of its educational value and volunteer involvement. Even during our local recession, foundations found the collaboration between host sites and Denver Audubon an attractive feature. The project does not duplicate efforts but is a unique, needed, cost- effective addition.
- **Businesses** — As this document is being written (1988) both corporations and banks are cutting back on charitable contributions because of poor economic conditions. Nevertheless, we have raised ten percent of our funds this year from civic-minded and science-related businesses. Some responded to a matching challenge from a local foundation; others were approached directly via personal contacts or via a persistent combination of phone and mail requests.
- **Organizations and Individuals** — A hand-full of groups (such as PTA's and Optimists) and non-members who share our concern for the education of youth have learned about the project and contributed to it. In all cases, DAS members involved in the project have stimulated these donations through one-on-one discussions.

Among the lessons we've learned from our fund-raising efforts to date are **the importance of personal contacts**, the need for an annual fund-raising plan with periodic checks and fall-back positions should the initial goals prove to be too ambitious, and **the importance of building each year** to involve more people in the fund-raising, to gain more donors, and to increase the size of the gifts so that adequate support exists when foundation support ends.

There is an old adage that people give to people. We have seen over and over how important personal contacts are given the demands on and competition for philanthropic dollars. Our first $31,000 was raised by our premier fund-raiser through a family foundation and a very generous personal friend. These people were willing to fund our first year because they had confidence in their relative's/friend's abilities and ideas. The rest of us shook our heads and said: we don't have any contacts like that . . . can't help. But some of us have **found** contacts. A few examples: (1) We got an appointment with a bank vice president who also happens to be an avid birdwatcher. He was immediately interested, understood the importance of our project, and introduced us to the vice president for public relations. (2) We found out the name of the head of the environmental department of a large corporation, concisely told him about our project and asked for his advice on how to get his corporation's financial support for the project. He allowed us to use his name in going to the man in charge of public relations, and we were able to get "in the door," establish the value of our project and acquire a contribution. (3) By using a foundation's annual report, we learned the names of those on the grant selection committee, and found two people who knew members or relatives of members and were able to bring attention to our proposal and to get it funded.

By persevering, by sincerely communicating our project's strengths and financial needs, and by asking for advice and guidance from those more experienced than we are, we have gotten many good suggestions and have found people willing to help us raise the funds necessary to sustain the project. As is the case with volunteer recruitment, the key is to ask. We've met many generous, interesting people in the process.

Summary

We have raised funds to meet our project budget from a variety of sources. Since we had not previously done much fund-raising in the business and philanthropic sectors of our community, we have had to find and make connections in new arenas, have had to ask others for their advice, and have learned much. We have found financial supporters among our members, foundations, corporations and banks, and other organizations and individuals who share our goals. Merchants and agencies with whom we do business have contributed by providing in-kind goods and services.

The budget for each city's project is largely dependent on program size. They range from $7,000 to $30,000. Most projects have a part-time Coordinator. The Denver and Ft. Lauderdale projects, each have two paid staff members who share a full-time position and are responsible for fund-raising as well as project planning and implementation. (Pages A7 and A8 contain sample budgets for projects with full-time and part-time staffs.) The project in Prescott, Arizona, is the only one that does not yet have a paid coordinator. The project leaders believe that the project's future would be more secure with a part-time paid leader and are aiming for that. In the interim, a retired professional is coordinating the project, which runs on an annual budget of about $1,000.

Each city has taken a somewhat different approach to supporting its budget needs — drawing on the sources most readily available in their communities. While Louisville's program is funded largely from fees; Birmingham and Prescott project leaders eschew fees for their programs. Seattle's funding to date has come from Seattle Audubon's

phone-a-thon to members and their general fund. They recently have initiated appeals for corporate and foundation grants and have started some earned income ventures. Massachusetts Audubon Society and Broward County (FL) Audubon Society have funded their projects largely with funds from individual contributions and from regional, state and local grants. Funding for these projects will most likely become more diverse as the projects mature. By the early 1990's, the funding for Denver's Urban Education Project came from a fairly consistent mix of sources:

Audubon members and friends (individual contributions)	32%
Local foundations (private and public)	20.5%
Corporations (direct contributions and bug-race sponsorships)	16.5%
Earned income (program fees, classes for adults, sales of books and supplies)	19%
In-kind donations (esp. office space from Denver Public Schools)	12%
	100%

Recessions that plagued various parts of the country in the late 1980's and early 1990's tightened the availability of philanthropic dollars. In this climate it was especially important to be creative and persevering. Here are some ideas our projects have tried and found successful that might lead you to a previously untapped source in your community:

- **Bug Races** — In 1988, a wacky group of Denver Audubon UEP volunteers organized the first Critter Criterion, "World-Class Roly Poly Races". We all saw it as a way to provide folks employed in Denver's downtown office buildings with a fun lunch-hour break and enable them to support our good cause. It also has become a way for corporations to support us in a more visible manner and gives us the best media coverage our program gets all year. Basically teams of kids and adults race pillbugs, sow bugs, and in the open category, all sorts of other critters — after paying an entry fee or gaining a corporate sponsor. The first races each raised about $3,000.
- **Classes and/or tours** — Seattle's project conducts a tour of people's yards landscaped especially to attract wildlife, and Denver's project offers birdfeeding and photography classes. These require small amounts of time and energy to set up and can be repeated two or three times each year. By charging $15 to $75 (depending on the number of hours involved), each one nets several hundred dollars. Classes (or workshops) especially designed for teachers and offering college credit can be even more profitable.
- **Retail sales** can be a risky business — especially if you have to pay for your inventory of goods first. They also require a well-thought-out marketing plan to succeed. Seattle Audubon has what seems to be a sure winner, however. They are selling their patented

birdseed mix **wholesale** to a local grocery chain. In addition to stocking the seed regularly, the stores will feature the Audubon seed on special days and invite Audubon representatives to be in the store recruiting education volunteers and new Audubon members, and in general, promoting Audubon.

- **Contributions from other organizations** — PTA's in Prescott, the Kentucky Association for Environmental Education in Louisville, and the Junior League in Birmingham have all contributed generously to projects. In some cities these organizations become cosponsors contributing regularly and/or recruiting volunteers too; in others, they just choose to support the program on a one-time basis. We have found that some donors want to be thanked and recognized in a very public, visible way, while others prefer to remain anonymous. Consider creating options at both extremes if you don't have them already.

Establishing a Fee Structure

- **To establish a policy regarding user fees and determine a reasonable fee level.**

From the beginning, the instigators of Denver Audubon's Project had envisioned charging participants a "user fee." In fact, their initial plan was to totally or largely fund the program with payments made by those benefiting from the program.

Professionals who had recently implemented user fees for private nature-oriented learning experiences advised us to charge "whatever the market will bear." So we compiled a list of special natural history, wildlife and science programs available to school classes and youth groups in our community and phoned each one to find out about their fee structures. They all charged on a "per child" basis, and their fees ranged from $.50 to $2.50 for a one to three hour period.

It was costing us between $1.00 and $2.00 per child just to set-up and maintain the materials kits for each season. (The activities used in some seasons required more expensive materials than those used in other seasons.) So if we were going to keep our fees in the price range of the programs mentioned above, we clearly could **not** cover the **total** program costs (including staff salaries) via user fees.

The Education Committee discussed at some length the comparative educational value of a three hour class trip to the zoo versus a one hour assembly speaker versus three one-hour hands-on outdoor small group investigations. But the Committee concluded that the bottom line was the amount of money schools and non-school sites had available each year to spend on "extra" programs and the competition for that resource. Sites would be weighing choices with an eye towards getting "the most" for their money: a $50 snake assembly for all students, a $110 trip to the zoo for the third graders, and so forth.

We decided to go to the staff members at sites that had been hosting the program and giving us feedback for two to three seasons and get their views. We let them know we were considering a fee of $1.50/child/season (assuming three activities/season) and asked whether that was workable. Their reactions ranged from "That's not steep. No problem." and "I'm surprised a fee didn't come earlier." to "We don't know how we'll get the money, but we'll find a way 'cause we definitely want to keep the program."

The following season we began testing this fee structure:

	1 season	For all 3 seasons with the same kids
1 school class (up to 30)	$55	$100
non-school group		
of 18	$35	$ 60
of 12	$25	$ 50

Our intent was to give sites that would involve the same students throughout the school year a price break based on the fact that their children would continue using the same magnifying lens (the most expensive single item we had to purchase). This "deal" did encourage some sites to stick with the program for three seasons rather than offering it for just one or two. All youngsters got to keep their lenses at the end of their program.

To facilitate fee collection, we billed each site each season using a simple form. (See page 69.)

We experienced no problems in collecting the fees — although there was a lag in payments the first season because it took some sites a while to figure out where they were going to find the money. It comes from a variety of sources.

At some schools, the PTA pays the entire fee for all students with proceeds from school carnivals and other events. At others, the money comes from bake sales or special activity funds. Sometimes youngsters are asked to bring the money from home. And frequently, the cost is split with part coming from each of several sources. We insist that no one be excluded from the program due to inability to pay, and require sites that collect money from home to either offer "scholarships" to disadvantaged children or to let us know about such situations so we can waive the fee.

Our biggest mistake regarding fees was that we didn't quote the fees in

whole units per child. This just seems to be much easier for sites to deal with. As a result, our 1987-88 fees were:

$2/ child for one season (three activities)

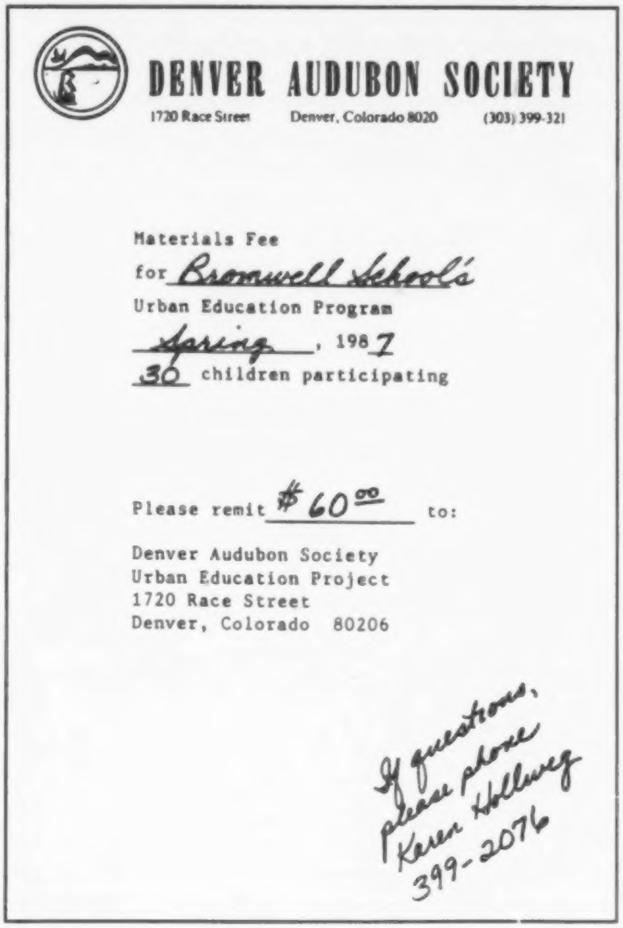
or

$5/child for the entire school year (nine activities)

Some sites pay the yearly fee in a lump sum; others pay it in installments. (In 1991 the fees are still at this level.)

Because the program is different in format and organization from other programs that these sites have sponsored in the past, we have found it best to give an "introductory offer" to new sites. It's hard for them to decide whether the program is worth the price when they don't really understand what the program entails or how it works. During our first meeting with a new site we have explained the standard fees and then noted that there is no fee for the first season, but that if they find the program valuable enough to continue offering it to their youngsters, they will be assessed at the going rate.

These "materials fees" only provide us with ten percent of our total budget — a far cry from the income we had originally envisioned from user fees. So you may wonder: why go to the trouble for such a relatively small amount? The first reason is that this amount seems to be what the market will bear. The second is a philosophical one. We've decided that it's important for the recipients of our services to acknowledge the value of the program in financial terms — to be serious enough about wanting it to "buy-in" or invest in it.



DENVER AUDUBON SOCIETY
1720 Race Street Denver, Colorado 8020 (303) 399-321

Materials Fee
for Bromwell School's
Urban Education Program
Spring, 1987
30 children participating

Please remit $60.00 to:

Denver Audubon Society
Urban Education Project
1720 Race Street
Denver, Colorado 80206

If questions,
please phone
Karen Hollweg
399-2076

This philosophy has also been voiced to us by staff members of some host sites. For instance, a teacher and a community center director have each told us independently, "Our kids always seem to be able to come up with 50 cents for candy or pop, so $1 for a magnifying lens should be no problem . . . and by paying for it, they'll probably take better care of it."

Summary

By learning about fees charged for other programs in our community and by working with the staff members at our host sites, we've been able to establish fees that are competitive and a collection system that is workable. Although these fees cover only a small fraction of our total program costs, we feel it is important for the program's recipients to have a part in its financial support.

Each of the new cities had to deal with the same kinds of fee questions that we dealt with in Denver. For some it was a quick and easy decision based on (1) the community's **philosophy and precedents** regarding fees and (2) the leanings of the Boards and/or steering committees of the local project sponsors. Prescott Audubon and Ruffner Mountain Nature Center decided they did NOT want to charge a fee, and at this time they still do not.

On the other hand, Louisville's Urban Ecology Steering Committee built their project's budget on a fee from day one. In Louisville, schools and after-school sites that serve youth **are used to paying fees** for cultural activities and a variety of education enrichment programs. Every school and non-school site picks from a large number of choices and has its own procedures for paying the bills for these. The Museum itself reaches 200,000 fee-paying school children each year at the Museum and through a variety of outreach programs. The Urban Education Project, as one of the outreach programs, benefits from the support of the 12-15 professionals in the education department and in the well-established museum offices that handle computerized registration, publicity, publications, A- V productions, etc.

In 1989-90, the Urban Ecology fee was $3/student for three 1-hour sessions. In 1990-91, they raised their fee to **$4.50/student for three 1-hour sessions** and have sold all of their program slots. They do not plan at this time to raise the fees further because their customers perceive $5.00 as a ceiling — a fee level they are not willing to exceed.

This substantial fee also adds a different dimension to the job of the Urban Ecology Project Coordinator. She is responsible for selling all the program slots — bringing in the income that pays her salary.

In Louisville, the fact that administrators inside the school district were willing to help market the program to their colleagues was important in establishing the fee-based project. Central office administrators put announcements in district-wide newsletters, and distributed memos to and phoned personnel at prospective schools. Principals who's students had been involved in the pilot test invited their colleagues to meetings at their schools to learn about the program. In addition, the museum advertised the program in their publications and promoted it through their entire network of staffed services and community linkages. This marketing effort filled all the slots for the 1989-90 program and, since then, returning customers and new customers attracted by advertising, word-of-mouth referrals, and sales by the Project Coordinator have continued to fill the program. (They are now especially targeting the elementary schools located nearest the high schools that supply the teen volunteer leaders, so that transportation time and costs can be kept to a minimum.)

In Ft. Lauderdale, Florida, the fee decision was not an easy one. The initial decision of both the Broward County Audubon Society's Education Committee and the school district officials was to charge no fee. But in 1991 that decision was reversed. Both groups decided that as the project's initial state-funded environmental education grant ran out and the project became dependent on local funding, it was necessary to charge a fee to help the project survive financially. Beginning in 1991-92 the fee was set at $2.50/child for five one-hour activities.

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Timeline for Starting a VINE Program

PLEASE NOTE: There are two different types of assistance available to you as you start your VINE program.
(1) *Volunteers Teaching Children* provides written guidelines and suggestions based on the experiences we've had beginning new programs in many different cities. For each step below, we have cited pages in this book which provide more details. (Page numbers are in parentheses.)
(2) NAAEE's VINE Network Office keeps in touch with VINE Programs across the country. If you wish to "jump start" your program by hiring an experienced project coordinator to consult with you for a day or two, please contact us. We can support your efforts in a variety of ways from writing grant proposals to conducting workshops and providing technical assistance.

Dates

I. Fund Program (2 weeks to 6 months)
Time needed depends on source(s) of funding. Allocation of discretionary funds can be done quickly; raising new funds from individuals, corporations or foundations will take more time. (See pages 63-70, and A7-8 in the Appendices)

____________ to ____________

II. Select Project Coordinator (1 to 8 weeks)
(See pages 11-12, 21-22, and A3-6.)
- re-assign an existing employee to this full or part-time position **OR**
- hire a new person to spearhead the new program

____________ to ____________

III. Local Project Planning Workshop to involve potential community cosponsors, cooperators, and funders in the design of a program that's appropriate for your locale (4 to 6 weeks)
- set date and meeting site
- plan meeting and identify participants (see pg. 9-22 and P1-16 in the Appendices)
- conduct workshop with experienced project leader(s) from another city *

____________ to ____________

IV. Preparations to start pilot project (4 to 6 weeks)
- identify "starter" activities (pg. 22-24 and M15-17) *
- select sites and recruit volunteers (pg. 25-33, 37-43)
- assemble materials (pg. 46-49 & M3-31 in Appendices)

____________ to ____________

V. Volunteer Training Workshop & Site Planning Meeting (2 to 3 weeks)
- set date(s) and meeting site
- plan training workshop(s) and site meeting(s) (pg. 33-38, 43-46, A9-31, and A35-41)
- conduct workshop and meeting *
- agree on pilot evaluation plan *

____________ to ____________

VI. Conduct and evaluate pilot (5-10 weeks)
(See pg. 50-54, A19-20, A42-50 and A52-53.)

____________ to ____________

* Points at which the assistance of an experienced project director from another city is especially useful. See (2) above.

1/95

Designing Your Program Planning Workshop

Every successful volunteer-led program in the VINE Network has started with a **Program Planning Workshop**. Because these programs, by their very nature, depend on a diverse collection of organizations and institutions to succeed, we've found it important to involve all of the cooperators in designing the local program. After all, you'll want everyone to find the program attractive and worthwhile — i.e. a program that meets their needs and merits their on-going support.

The **purpose of the workshop** is to bring together potential cosponsors, supporters, and allies so that they can:

- learn about existing VINE programs — their purpose, objectives, individual variations in structures and ways of functioning;
- assess the need, niche(s) and resources for such a program locally;
- describe long-range options/future(s) to aim for, and
- agree on a structure and method for getting started — identifying core leadership group(s) and roles each organization/agency wants to fill.

Two factors are key in the workshop's success:

1. The "lead institution", that sponsors the workshop and the new program, must walk a delicate tightrope. It must play a **leadership role** and carry the biggest load by, for instance, allocating staff-time or hiring new staff to serve as Project Coordinator, and by attending to details and ensuring follow-through. But, at the same time, it must **make sure that everyone's ideas and participation are welcome and included** in this collaborative endeavor — and must make it easy and satisfying for all to participate.

2. The workshop must **involve everyone in an active, engaging experience** — so that they **learn about the program by doing it**, not by just hearing about it. This approach is required by the program's philosophy and leaves the participant with a vivid impression and first-hand understanding of the nature of the program.

Setting the Agenda

A suggested agenda is printed on pages P7 and P8. It is the result of our experiences conducting project planning workshops in over a dozen cities across the country. You will need to tailor it to your specific situation, but we strongly recommend that your workshop include five central features:

1. **An open, involving tone** which can be set from the beginning by a group of "greeters" who begin soliciting each participant's ideas as they arrive.

2. The **participation of everyone in an outdoor investigation** that models the program you aim to establish in your community.

3. An **overview of the variations in VINE Program designs** that enable each local program to tap the resources available in its community.
4. **Time to get everyone's ideas for your local program** so that you can consider a diverse array of options for supporting and sustaining your program while it's still in the formative stages.
5. An **opportunity for all** participants at the end of the workshop **to indicate their interest in collaborating**, the resources they would most like to contribute, and the level of commitment you might expect from them. By getting this in writing now, you will have what you need to move forward once the workshop is over.

You may very well have talked with the staff in the VINE Network office and with coordinators of VINE projects in other cities, by now. Whether or not you have already done this, as you prepare for your workshop, you may want to contact the VINE Network staff to learn about the kinds of **technical assistance** * we have available. We have found that it is possible to "jump start" new programs by having an experienced project coordinator spend a day with your staff at this point. Among the things that he/she could do are the following:

- help your group plan, prepare for and conduct your Program Planning Workshop
- meet with you and/or your administrators, boss(es), board members, to answer questions about VINE programs and the VINE Network
- go with you to several potential pilot test sites and conduct a site inventory to determine which activities will work best
- help you plan for your pilot test with staff at one of your pilot test sites
- discuss local project design and pilot test plans including any of the following: program delivery sites, volunteer recruitment, activities, materials preparation, volunteer training packets and training workshops, formative evaluation, program funding.

Whether or not you choose to enlist assistance from the VINE Network, you and your organization will need to make some programmatic decisions as you plan the agenda. In preparation for the two brainstorming segments, we suggest you define (1) the **decisions you've already made** about your program and (2) the program elements where you have the greatest **needs** and therefore need the most ideas and additional resources. Then you can announce the decisions you've already made and can focus the brainstorming sessions on and generate ideas for filling your real needs. Pages P10 and P11 provide a worksheet to help you with this and examples of "Brainstorming Questions" that have been used at other planning workshops.

Who to Invite

The areas of need you identify should guide both your agenda setting and your decisions regarding who to invite. In general, we think you'll want to invite leaders who can involve others and/or commit resources, and we recommend that you include as many people as possible — up to 40

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* Contact NAAEE's VINE Network office by phone 202-884-8912 or by fax 202-884-8701. We'll be glad to hear about your plans and discuss various ways in which an experienced VINE coordinator could work with you.

Think about the **new audiences** that you want to reach out to and involve in this program, and invite leaders from different racial, cultural, and socioeconomic groups — people from occupations and organizations that you may not have worked with before. Consider the following categories of people:

- people who could recruit and are sources for **volunteers** (e.g., leaders of service clubs, active seniors groups, PTA's, high school sources — especially high schools with "community service" programs, and businesses with community volunteer programs for employees)
- potential **sites** with students or mixed-age groups of youngsters who wouldn't otherwise have opportunities to participate in programs like these (ideally 4th graders or 8-11 year-olds)
- potential **cosponsors** — organizations and agencies with similar interests and goals, but, ideally, those with different resources to contribute
- potential **funders** (e.g., corporations, foundations, service clubs)
- ecology **education leaders**, from both formal and informal education institutions, who know what kids like to do, what's available locally, and what's needed (e.g., from university schools of education and biology departments, from the school district administration and faculty, from after-school and weekend programs that serve disadvantaged youth, from alternative schools within the public school system)
- adults who can serve as **advocates for the disadvantaged youth** you want to reach (e.g., parents, church and community leaders)

Besides reaching out to new audiences and potential allies in the above categories, you'll also want to involve leaders from your own organization and allies whose support you'll want as you proceed. Don't forget your Board Members, donors/potential funders, potential steering committee members, and people who have a real interest in nature and in the youngsters growing up in your city. The Program Planning Workshop is a unique time to get both long-time supporters and new collaborators together on an equal basis to meet and begin creating and shaping your new program. Include **everyone** you'd like to have involved now, knowing that some may drop out, but that you **won't** have an opportunity later on to begin again and involve others in this first step.

When

Your list of potential invitees will probably suggest the best time to hold your workshop. Are they more likely to be available mornings? late afternoons after school dismisses? early evenings? If there are two or three people representing new audiences that you've not previously worked with but who you consider most important, don't hesitate in phoning them to find out what times would be best for them.

Successful workshops have been held at various times. As you select a time for your workshop consider:

- a time that's **convenient** for participants
- dates free of **holidays** or events that preoccupy some of your invitees (Remember to check for celebrations in which members of different religious denominations and/or ethnic groups may participate.)
- a time that will enable you to do an outdoor investigation in **daylight**
- the option of providing a box lunch or pizza supper, and building your deliberations around a meal-time

Where

We suggest holding your workshop at one of the sites where you plan to deliver the program to children — e.g. a central city school or community center. Such a location will enable all participants to experience the excitement of conducting ecological investigations and the thrill of making discoveries in the city, will convince them of the value of a program for children that's conducted right in their everyday environment, and will place your planning deliberations in a neighborhood setting where you intend to deliver the program. While your instincts may be to seek out the newest facility with the most biologically rich surroundings, we encourage you to use a facility and grounds that are more typical. We know that VINE programs work well even at some urban sites that seem very sparse at first glance, and know that many of your workshop participants will be very pleasantly surprised and enthusiastic when they discover this for themselves.

When you visit a potential workshop site, check to make sure that it has

- room to accommodate all participants at tables (with about 6 to 8 people per table), refreshments, audio-visual equipment, and lots of lively discussions
- easy access to the outdoors and adequate space and resources for conducting *Plant Hunt* or whatever outdoor investigation you have chosen. (See page M17 for guidelines regarding space and resources needed for each group of 6 people. Also check "other requirements" on page M17 and make sure the chosen activity can be done at this site.)
- easy access by public transportation and/or parking for those who drive
- an obvious entrance with clear signs so that participants can find the place

Invitations

The groups we've worked with have found that a combination of phone calls and mailings are necessary to recruit the key people they've identified to participate in their workshop. Examples of mailed invitations are on page P13. But don't rely on mailing alone. Be sure to use all your most creative tactics, using phones, e-mail and personal contacts, to get everyone to attend!

Thinking Ahead

Once you've thought through the basics of your program planning workshop, be sure to think ahead and consider

- the types of on-going assistance you need to succeed, and
- what you can do at the end of the workshop and in the days immediately thereafter to enlist the help of particular people

One device that has helped some cities in this regard is a feedback form or survey sheet. As the examples on page P14 show, this will give everyone a chance before leaving the workshop to quickly note whether or not they are interested in continuing to be involved. In addition, it may uncover community resources worth pursuing (for example, a participant's son who is active in the local college's ecology club and could open the door to many volunteers, or a participant's spouse who serves on the community giving committee of a large corporation and could help with fundraising).

Prepare a form that will capture the information you want and make time on the agenda for its distribution and completion. Then, don't forget to follow-up right away and capitalize on people's interest and enthusiasm before it wanes.

SUGGESTED AGENDA FOR LOCAL PROJECT PLANNING WORKSHOP (approx. 2 ½ to 3 hrs.)

	who's responsible:
as people arrive — Have them sign-in (This is your chance to get accurate name spelling, phone # and best times to call and reach them.) and get nametags and magnifying lenses. An introductory activity that's good for tapping people's knowledge and readily developing a list to verify program need or overlap is to ask: What Outdoor Environmental Education and/or Nature Programs Exist for Kids in (city name)? (create 3 columns: Program Name; Location of Outdoor Activities; Target Audience & Ages)	Have several outgoing people greet folks, and help start conversations. The greeters (above) should invite everyone to add to the list. Set up chart paper with titles and markers in advance.
5 minutes — **INTRODUCTION** Summarize existing programs for kids and point out niche you aim to fill. Review purpose of workshop and agenda — i.e. to bring together potential cosponsors, supporters, allies to • learn about VINE programs, • assess the need, niche(s) and resources for such a program here, • generate ideas for getting started and directing the development of a local VINE program.	Welcome by Head(s) of Lead Institution(s). Post chart paper with agenda items and times.
50 minutes — **GO OUTSIDE & EXPERIENCE VINE** Suggested investigation: Plant Hunt. Split participants into small groups of 6 to 8, one leader and kit of materials for each small group. Begin by "Teaching Proper Use of the Magnifying Lenses" (pg. A12 in Volunteers Teaching Children), and proceed with "Action" #1-9 of Plant Hunt. Finish by playing "The Leaf Characteristics Game", and make leaf rubbings as time allows. (See pg. M29.) In inclement weather, you may choose to move inside after Action #3.	Well in advance, line up one experienced facilitator per 6 to 8 participants and provide them with the materials they need to prepare the activity.
10 minutes — **BREAK** (and refreshments, back in the workshop room)	
15 to 25 minutes — **THE ESSENTIALS OF VINE PROGRAMS** Distribute and review OBIS cards for the outdoor activity that was done. (Allow participants to read one example of the curriculum and see in print what they have experienced. Emphasize that the volunteer/group leader is NOT expected to be an expert.) State Objectives of VINE Programs (pg. 19-20 in Volunteers Teaching Children) and display them on an overhead transparency or chart paper. Refer to diversity of other possible activities. (Show 8-10 others that may be appropriate for your locale. See page M37 & M39 for some possibilities.)	VINE Network representative* or a local designee Post "Program Objectives" and "Essential Parts of VINE Program" for reference. (See page P9.)

Describe VINE program format and features: sites with kids, trained volunteers, lead institution, project director/coordinator, office/work/storage space, kits of materials, funding and inkind-services, steering committee.
Questions and answers with VINE Network representative.

Present slide show — to show & describe the variety of settings and formats for local VINE programs.
(Videotape "Volunteer-led Investigations of Neighborhood Ecology: VINE Programs in Action" may be substituted, if necessary, to give a brief program overview.)

40 to 45 minutes — **BRAINSTORM: IDEAS FOR OUR LOCAL PROGRAM**
5 to 10 minutes for each topic —
Brainstorm/discuss/plan: How can local needs for our local project be filled? Refer to list of brainstorming questions/topics that you prepared in advance. (e.g., volunteer sources, funding sources, etc.)

Line up one experienced facilitator per 6 to 8 participants. (Could be same group leaders as above.) Give each one a list of the Brainstorming Questions that you have prepared in advance. (See pg. P11) Make sure that a recorder in each group has a marker and chart paper to capture all ideas.

10 to 20 minutes — **YOUR ULTIMATE VISION FOR (____city's name____)' S PROGRAM**
Brainstorm: If this program were to bloom and grow, what would it look like 3-5 years from now? What's the best possible dream you can imagine for its future?

10 to 15 minutes — **WORKSHOP EVALUATION & WRAP-UP**
Summarize the input received during Brainstorming Sessions and let people know your institution's next steps.
Distribute Workshop Evaluation/Feedback Forms (see pg. P14 for examples) and ask everyone to complete one before leaving.
Thank everyone for their participation.

Conducted by Head(s) of Lead Institution(s).

* Call the VINE Network Office to inquire about having a representative come and help conduct your workshop. In addition to bringing workshop materials, this person could provide technical assistance to jump-start your program prior to or following the workshop. (See pg. P4)

ESSENTIAL PARTS OF VINE PROGRAMS

- program coordinator
- trained volunteers (1:6)
- sites with children
- selected OBIS activities
- kits of materials
- sustainable funding

VINE PROGRAM OBJECTIVES

Provide children with outdoor experiences in their own neighborhoods to

- discover and explore plants, animals, ecological interactions.
- work together with the same volunteer leader and small group over weeks or months (5 to 8 times).
- develop skills for observing, investigating, thinking critically.

ASSESSING YOUR ORGANIZATION'S NEEDS: What aspects of your VINE Program are Pre-determined? and In which areas do you need the most help and new ideas?

Essential Parts of VINE Program	Things that we:		Questions to be answered for items that you "need" (for examples, see page P11)
	already have	need	
Program Coordinator (with salary paid by lead institution)			
Trained volunteers (1 per 6 children)			
Sites with children grade 4 or ages 8-11			
Kits of Materials, plus storage space and a cadre of volunteers to maintain them			
Experts • People good at scouting resources at sites and selecting activities • People with expertise in volunteer recruiting and organizing • Educators with lots of experience in small groups and inquiry learning • People with experience fundraising			
Sustainable funding • potential sources (grants, donations, earned income) • strategies and connections			
Steering Committee • function and composition			

Natural Connections Meeting
Brainstorming Questions
(5-8 minutes each)

5:30 1. What times of year do you see Natural Connections being done with Baltimore kids ? + What are the advantages and potential conflicts for each time/season ?

5:37 2. What are some good sites with kids where we could do Natural Connection activities ? + How do we attract these sites to participate ?

5:44 3. Where can we find volunteers to serve those sites
  a. as small group leaders ?
  b. to prepare materials/kits ?

5:51 4. How do we get visibility in Baltimore for this program ? (Think about all the different kinds of people who should know about it, and how we can reach them.)

5:58 5. We have funding in hand for the pilot test period. What additional sources of funding and in-kind contributions can we find to expand the program ? (eg. in-kind things like: articles in publications, ads for volunteers or sheer curtains in newsletters, community-minded companies with volunteers or bonuses, like T-shirts, for volunteers.)

6:05 6. If this program were to bloom and grow, what would it look like 3-5 years from now ? What's the best possible dream you can imagine ?

6:12

McHenry County Program Planning Workshop

Brainstorming Questions

*Please remember to have a member of your group record all ideas generated under each question/heading

8:05 1. Potential sources of volunteers
- to conduct outdoor investigations with kids?
- to collect and make, revamp and circulate kits of materials

8:15 2. What potential sources of funding exist or could be developed for
- in-kind contributions?
- sizable grants?
- lots of small-sized donations?
- products/earned income?

8:25 3. List all possible advantages and disadvantages of this type of a neighborhood program.

8:35 4. What questions need to be answered by a small pilot program (before expending to include more sites and volunteers)?

8:45 5. Ultimate Vision for McHenry County's Program:
What's the best possible dream you can imagine for the future of this program? What might it look like 3 to 5 years from now?

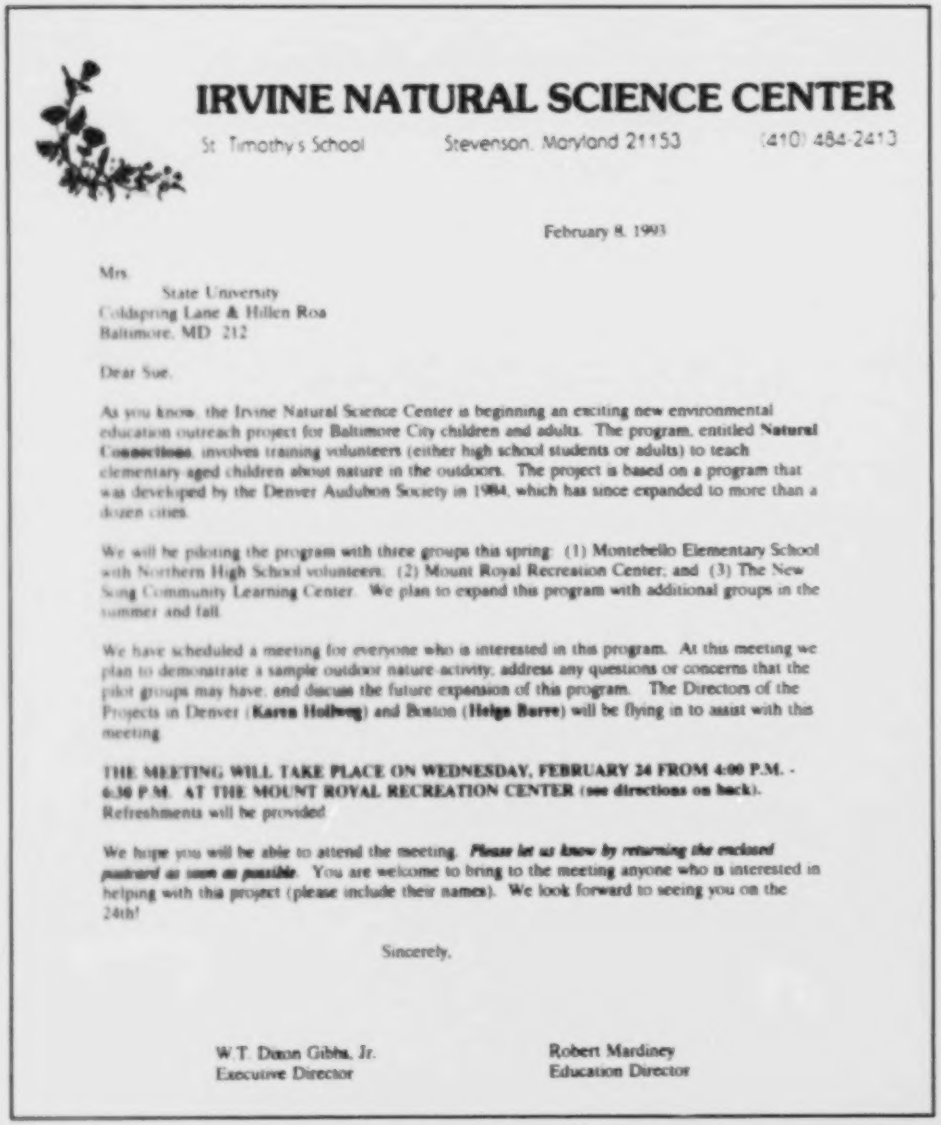
WORKSHOP PREPARATION CHECKLIST

# expected at workshop ____ Workshopdate/time____________________

Room set up: ____ tables, ____ chairs Outdoor investigationplanned____________________

	✔	NOTES
A-V equipment: slide projector and carousel or VCR/TV, extension cord		
Refreshments		
Sign-up sheet		
• Magnifiers & yarn for necklaces		
Nametags (see pg. A38)		
Kits of materials for outdoor investigation (1 kit for 6-8 partic.; see pg. M27-29)		
Flip-charts and/or databoards (see pg. M5)		
Masking tape (for posting chart/poster paper)		
Chart to post for intro. activity		
"Agenda" to post		
• overhead transparency and/or posterpaper with "Program Objectives" and "Essential Parts of VINE Program"		
• VINE photo display board		
• slides or video		
• OBIS cards - multiple copies - of outdoor investigation done by all - of various possible titles		
copies of Brainstorming Questions for small group leaders		
evaluation & commitment sheet for end of workshop		

• If a VINE representative is helping with your workshop, be sure to coordinate who will be providing these items.



IRVINE NATURAL SCIENCE CENTER

St. Timothy's School Stevenson, Maryland 21153 (410) 484-2413

February 8, 1993

Mrs.
State University
Coldspring Lane & Hillen Roa
Baltimore, MD 212

Dear Sue,

As you know, the Irvine Natural Science Center is beginning an exciting new environmental education outreach project for Baltimore City children and adults. The program, entitled **Natural Connections**, involves training volunteers (either high school students or adults) to teach elementary aged children about nature in the outdoors. The project is based on a program that was developed by the Denver Audubon Society in 1984, which has since expanded to more than a dozen cities.

We will be piloting the program with three groups this spring: (1) Montebello Elementary School with Northern High School volunteers; (2) Mount Royal Recreation Center; and (3) The New Song Community Learning Center. We plan to expand this program with additional groups in the summer and fall.

We have scheduled a meeting for everyone who is interested in this program. At this meeting we plan to demonstrate a sample outdoor nature activity; address any questions or concerns that the pilot groups may have; and discuss the future expansion of this program. The Directors of the Projects in Denver (**Karen Hollweg**) and Boston (**Helga Burre**) will be flying in to assist with this meeting.

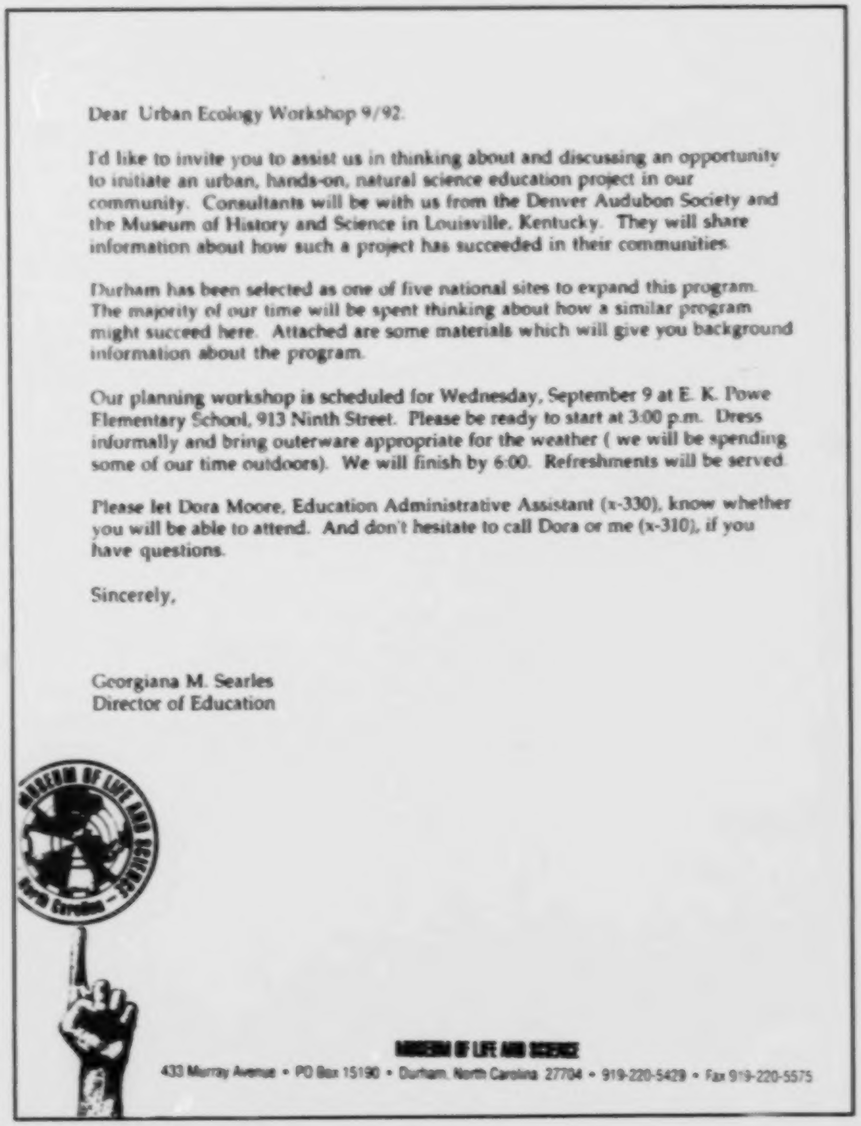
THE MEETING WILL TAKE PLACE ON WEDNESDAY, FEBRUARY 24 FROM 4:00 P.M. - 6:30 P.M. AT THE MOUNT ROYAL RECREATION CENTER (see directions on back). Refreshments will be provided.

We hope you will be able to attend the meeting. ***Please let us know by returning the enclosed postcard as soon as possible.*** You are welcome to bring to the meeting anyone who is interested in helping with this project (please include their names). We look forward to seeing you on the 24th!

Sincerely,

W.T. Dixon Gibbs, Jr.
Executive Director

Robert Mardiney
Education Director



Dear Urban Ecology Workshop 9/92:

I'd like to invite you to assist us in thinking about and discussing an opportunity to initiate an urban, hands-on, natural science education project in our community. Consultants will be with us from the Denver Audubon Society and the Museum of History and Science in Louisville, Kentucky. They will share information about how such a project has succeeded in their communities.

Durham has been selected as one of five national sites to expand this program. The majority of our time will be spent thinking about how a similar program might succeed here. Attached are some materials which will give you background information about the program.

Our planning workshop is scheduled for Wednesday, September 9 at E. K. Powe Elementary School, 913 Ninth Street. Please be ready to start at 3:00 p.m. Dress informally and bring outerware appropriate for the weather (we will be spending some of our time outdoors). We will finish by 6:00. Refreshments will be served.

Please let Dora Moore, Education Administrative Assistant (x-330), know whether you will be able to attend. And don't hesitate to call Dora or me (x-310), if you have questions.

Sincerely,

Georgiana M. Searles
Director of Education

MUSEUM OF LIFE AND SCIENCE
433 Murray Avenue • PO Box 15190 • Durham, North Carolina 27704 • 919-220-5429 • Fax 919-220-5575

BEST COPY AVAILABLE

Natural Connections Meeting
February 24, 1993

Evaluation and Survey

Name ____________ ____________ Phone ____________

Organization/Affiliation ____ ____________ Best time to reach you ______

Address ____________________

____

Please take an few moments to complete this evaluation and survey. Your feedback is greatly appreciated !

EVALUATION

1 What parts of the meeting did you find most helpful ?

2 Was the meeting what you expected ? In no, why not ?

3 Do you have any additional questions or comments not addressed ?

SURVEY

1 Are you interested in being further involved in the future of this project ?
Yes ____________ No ____________

2 Which of the following items would you be interested in working on ?

Serving on a Steering Committee _____
Leading activities with children _____
Assembling and/or providing materials _____
Helping us find additional volunteers _____
Helping us locate additional sites _____
Helping us to identify future funding sources _____
Other (please specify) ____________________

Workshop Feedback Form

Our objectives for the workshop are listed below. Please check the appropriate column to indicate the degree to which we achieved each objective.

	Definitely	Somewhat	Not at all
* aquaint you with volunteer-led investigations of neighborhood Ecology (VINE) programs in other cities.			
* enable you to think about the possibilities for such a program in our community.			
* tap your thoughts and expertise, and get you involved in designing the program for our community.			

If someone asks you tonight what this program is about or what it's like, what would you say? (just one brief sentence)

This workshop was: **Outstanding** **Very Good** **Satisfactory** **Fair** **Poor**
(circle one)

As our new program grows, we'll need to call on many people to help us in making it a success. May we call on you? (check one)

YES ___ **NO** ___ **MAYBE** ___

In what way(s) would you like to participate?

Name ____________________

Best phone # and time(s) to reach you? ____________________

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DENVER AUDUBON SOCIETY
975 Grant Street Denver, Colorado 8020 (303) 860-147

JOB DESCRIPTION FOR EDUCATION PROJECT DIRECTOR

I. Overview

The Education Project Director is hired by the Board based on the recommendation of the Education Committee. It is the responsibility of the Project Director to develop education programs that will promote understanding and appreciation of the environment of the South Platte Watershed and issues affecting that environment.

He/she receives direction from the Education Committee, which is responsible for making policy decisions. The Education Committee Chair is the Project Director's immediate supervisor and serves as the project's liaison and chief advocate on the Board. The Project Director reports to the Board at the request of the Education Chair.

The Board and Fundraising Committee have primary responsibility for funding this project.

II. Functions

A. Program Planning, Implementation and Management

-provide the Education Committee with data and suggestions necessary to make informed decisions regarding this project --- including especially: project elements or programs, their design, implementation, materials, promotion, and funding.
-develop and implement education program(s) as defined by the Education Committee.
-recruit, train, motivate, oversee and maintain a volunteer staff responsible for delivering the programs to the targeted groups.
-propose and manage the program's annual budget.
-conduct periodic program evaluations.
-prepare reports to inform the Committee, Board, and donors of the progress of the project.

see next page

B. Public Relations and Promotion

- -inform DAS members of the project and its accomplishments through the newsletter and other appropriate means.
- -cultivate interest in DAS education program(s) among reporters and writers to gain media coverage for the project.
- -promote the program(s) via appropriate channels, to potential users/participants.

C. Fundraising

- -work with the Fundraising Committee on the Annual Fundraising Plan as it affects the Education Project
- -cultivate, maintain contact with and meet with potential donors to explain DAS Envrionmental Education program(s) and solicit financial support.
- -prepare grant proposals for the project.
- -propose and help execute a fundraising appeal to gain contributions from DAS members.
- -coordinate plans and serve as the primary force behind Education Project fundraising events.
- -propose and implement fee structure(s) to generate income from program participants.
- -solicit in-kind donations of materials, equipment, and services from the community.

III. Performance Review

The Executive Committee will review the performance of the Project Director and will present their evaluation to the Board. In the project's first year, performance reviews will be conducted semi-annually. The Education Committee Chair and President will discuss the evaluation with the Project Director.

Sections I, IIA, IIB, III approved by Board, 9/18/84.

12/12/84 Executive Committee approved Section IIC., revised 1988.

FINDING URBAN NATURE (F.U.N.) PROGRAM DIRECTOR - Job Description

The F.U.N. Program is designed to be an outreach of Seattle Audubon. It gives children a chance to explore nature in their own neighborhoods with trained volunteers who enjoy sharing their love of nature. The F.U.N. Program Director is responsible for the overall operation of the program.

I. Overview

The Program Director is hired by the Board based on the recommendation of the Education Committee. He/she receives direction from the Education Committee which is responsible for making policy decisions. The Education Committee Chair is the Program Director's immediate supervisor and serves as the program's liaison and chief advocate on the Board. The Program Director reports to the Board at the request of the Education Committee.

The Board and Ways and Means Committee have primary responsibility for funding this project.

II. Functions

A. Program Planning, Implementation and Management.

- provides the Education Committee with data and suggestions necessary to make informed decisions regarding this project, including project elements or programs, their design, implementation, materials, promotion, and funding.
- develop and implement education program(s) as defined by the Education Committee.
- recruit, train, motivate, oversee and maintain a volunteer staff responsible for delivering the programs to the targeted groups.
- propose and manage the program's annual budget.
- conduct periodic program evaluations.
- prepare reports to inform the Committee, Board, and donors of the progress of the project.

B. Public Relations and Promotion

- inform SAS members of the project and its accomplishments through the newsletter and other appropriate means.
- cultivate interest in SAS education program(s) among reporters and writers to gain media coverage for the project.
- promote the program(s) via appropriate channels, to potential users/participants.

C. Fund Raising

- provide program objectives, descriptions, and information to the Education Chair for preparation of grant proposals for the project.
- meet with potential donors to explain SAS F.U.N. program.
- help execute a fund-raising appeal to gain contributions from SAS members.
- solicit in-kind donations of materials, equipment, and services from the community.

III. Performance Review

The Education Committee Chair will review the performance of the Project Director and will present an evaluation to the Board. In the project's first year, performance reviews will be conducted semiannually. The Education Committee Chair and the President will discuss the evaluation with the Project Director.

STEERING COMMITTEE RECOMMENDATION FOR DESIRABLE QUALIFICATIONS FOR A SIDEWALK SAFARI COORDINATOR

A thorough understanding of and commitment to Sidewalk Safari goals and objectives.

Highly developed social skills. Must be able to meet people and put them at ease. Have an open and accepting attitude to people of diverse personalities and background. Able to convey an appreciation and value of people's opinions and feelings. Capable of executing diplomacy when resolving problems.

Good communication skills. Able to give and receive oral and written information.

Good telephone skills. Speak standard English. Able to project joy and enthusiasm over phone.

Coordinating Abilities:

> Ability to recruit volunteers and assess their skills and interest. Able to match volunteers with jobs.
>
> Ability to recruit sites, assess their needs, and determine how they can best be served.
>
> Schedule volunteers and sites with in a time frame.
>
> Ability to assess site and match appropriate activity for the season.

Good organizational skills. Able to project and implement required steps and procedures to complete task.

Capacity to be flexible. Able to develop and switch to an alternate plan if schedule is interrupted.

Willingness to record data and motivate others to collect required information.

Able to work flexible hours.

Desire to work with adults and experienced in training adults. Able to delegate responsibilities and encourage individual growth and development.

Local (Birmingham area) resident. Active in urban neighborhood communities with some demonstration of current networking.

Some computer knowledge or willingness to learn.

Education: B.S. degree or equivalent work experience.

9/89

Sample Budget
1/2-time staff

August 1990 - July 1991
Good City's Special Outdoor Kids' Project
(600-700 children participate in 9 activities with 75 volunteers)

Expenses	Actual Dollars	In-Kind Contributions
Salary for Project Coordinator (20 hrs/week for 36 weeks)	$7,200*	
Volunteer Training Workshops (e.g. refreshments, workshop supplies, room rental, etc.)	30	$200
Materials for Volunteers (e.g. training packets, handouts, name tags)	150	
Materials & Supplies for Children (e.g. consumables like magnifying lenses, duct tape, marker pens, butcher paper & other not-scrounged, locally-purchased items)	220	
Office Supplies (e.g. pens, paper, postage)	450	
Public Relations (e.g. copying & printing brochures and/or flyers)	20	500
Phone - local		250
- long distance	50	
Payroll taxes & benefits	1,080	
Rent		1,350
TOTAL	**$9,200**	**$2,300**

Income		
Member's Appeal (mail & phone-a-thon)	$2,500	
Corporate Gifts	1,000	
Foundation Grants	5,700	
In-Kind Contributions		
Workshop space at city recreation center		200
Brochure printing by Giant Corporation		500
Phone and Rent from sponsoring organization		1,600
TOTAL	**$9,200**	**$2,300**

*Depends, of course, on local salary levels

2/91

Sample Budget full-time staff

August 1990 - July 1991
Urban Center's Special Outdoor Kids' Project
(1,500 children participate in 7-8 activities with 150 volunteers
plus 50 fundraising and materials volunteers)

Expenses	Actual Dollars	In-Kind Contributions
Salary for Project Director (40 hrs/week)	$20,000*	
Mileage	400	
Volunteer Training Workshops (e.g. food, supplies, room rental, etc.)	75	$200
Materials for Volunteers (e.g. training packets, handouts, name tags)	300	
Materials & Supplies for Children (e.g. consumables like magnifying lenses, duct tape, marker pens, butcher paper & other not-scrounged, locally-purchased items)	1,000	
Office Supplies (e.g pens, paper, postage)	450	
Public Relations (e.g. copying & printing brochures/flyers)	100	500
Fundraising (includes expenses for 1 event, 1 phone-a-thon, etc.)	1,500	
Phone - local		500
- long distance	50	
Payroll taxes & benefits	3,500	
Rent		4,000
Insurance	500	
Contingency	125	
TOTAL	$28,000	$5,200
Income		
Participant Fees	$ 3,000	
Member's Appeal (mail & phonathon)	6,000	
Individual Donations	3,000	
Corporate Gifts	2,500	
Foundation Grants	8,000	
Fundraising Event(corp. sponsors & entry fees)	3,000	
Earned income (classes & sales)	2,500	
In-Kind Contributions		
Workshop space at library and schools		200
Brochure printing by Giant Corporation		500
Phone from sponsoring organization		500
Office space and Rent free from Generous Agency		4,000
TOTAL	$28,000	$5,200

*Depends, of course, on local salary levels

6/91

Sample Agenda

VOLUNTEER TRAINING WORKSHOP

8:20 **Set up and get organized.** Make coffee/tea and set up donut/refreshment table.

Post agenda on a data board or chalkboard.

Set-up table with sign-in, name tags, mag lenses, Volunteer Portfolios and "library card" system for checking out and retrieving Portfolios.

Meet outside with workshop leaders (1 leader for each 6 participants expected), agree on boundaries of the territory each will use with his/her group (making sure that adequate resources exist in each territory), review challenge and action steps and materials to be used, and remind leaders to teach correct use of magnifiers before beginning the activity (see page A12).

8:50 As participants arrive have them **sign-in** (5x7 index cards can be used to create a file containing volunteer's name, address, phone number and best time(s) to call, and times available to volunteer), **get name tag and magnifying lens** and **check-out Volunteer Portfolio.** (See the top of page A11 for an example.)

9:00 **Welcome** participants and point out the posted agenda. Briefly explain the program's exploring-nature **purpose** and, in keeping with the learning-by-doing **philosophy**, the workshop's first step: everyone will go outdoors in small groups to do an activity and get a firsthand experience of the program in action. Pair each group of **six** participants with a workshop leader, and ask participants to **leave all their materials inside** so that they'll have they're hands free -- no need to take notes. (Arrange for security of purses and valuables.)

9:05 **Do first activity outdoors.** (Leaders should teach correct use of magnifying lenses and conduct the complete activity just as they would with a group of youngsters, modeling the volunteer leader role. Remember the old adage: Teachers teach as they've been taught.)

10:00 Back inside, invite everyone to have a cup of coffee/tea.

Have everyone take **copy of** the first **OBIS activity** out of the portfolio and review **the CHALLENGE and ACTION** steps that they will do with their group of six children just as the workshop leaders have modeled with them. Point out that the **"background"** section is only for the information of volunteers and is **not** to be taught to the children. Explain how volunteers will be provided their **kits of materials.**

Refer to volunteer job description in the portfolio and emphasize that **their role** is not to "teach" in the traditional sense, but to:

*CHALLENGE, INITIATE ACTION, ENCOURAGE LOOKING & INVESTIGATING.
*SHOW HOW TO EXPLORE NATURE by exploring with them -- enjoy it and show it.
*ASK QUESTIONS, LISTEN CAREFULLY, BE RECEPTIVE TO THEIR IDEAS.

It is important that volunteers understand that they are NOT expected to be a source of names or information, neither a Mr. Wizard nor an answer-person.

see next page

Sample Agenda

page 2

10:20 Pair up each group of six participants with a new workshop leader so they can experience a different person's style. **Do a second activity outdoors.** (Select an activity that is different in format. e.g. Animals in a Grassland & Roots and Shoots or Plant Hunt & Litter Critters are good contrasting formats.)

11:05 Back inside, review **guidelines for conducting an activity** in the portfolios and suggest using 3x5 "help cards" (they can be kept in a volunteer's pocket and used to remind him/her of action steps and discussion questions). (At the workshop you may choose to pass out blank 3x5 cards and have volunteers each write their own "help card" or to distribute printed "help cards" -- see example on page A13.)

Explain **schedule and sites** for the season, **substitute procedures,** and **logistics** for the program.

At this point, a brief slide slow (showing volunteers and kids in action) or anecdotes (such as the worst and best things you remember about working with your group of kids last year) from experienced volunteers can make the program "real" to neophytes. You may also wish to have an experienced person give some tips about establishing realistic behavioral expectations with children.

Questions and answers. (Be prepared to handle the inevitable questions about what to do with rowdy kids. Both Seattle and Prescott have invited experienced teachers who are involved with the project to handle this part of the workshop. Their professional experience in establishing clear expectations with children and dealing constructively with discipline problems has been very helpful.)

Invite participants to **review additional OBIS activities** in their portfolios and **look at kits of materials** for those activities, as workshop leaders answer individual questions and the project coordinator(s) work out schedules.

11:50 **Wrap up** the workshop by thanking the volunteers for their participation, reiterating their role as fellow-explorers with the kids (and NOT founts of knowledge), and wishing them much fun and many exciting discoveries!

NOTE: At subsequent training workshops, these volunteers will have opportunities to do additional activities, learn more about managing their group of students and materials, and acquire additional skills in asking questions and conducting discussions. It is important that the volunteers leave the first workshop with a clear image of the role they are expected to fill and with vivid recollections of their experiences of having doing the first couple activities that they will conduct with kids. Do NOT try to cram everything you know into the first workshop.

2/91

Name______________________ **Phone:** Best time(s) to call:

Mailing Address__________________ (Day)______________ ______________

______________________________ (Eve)______________ ______________

Season/year	Training Packet #	Working with Kids at	Other

I understand that the volunteer training packet I am checking out will cost $16.00 to replace. I will be responsible for returning it at the end of the season so that it can be reused.

Signature__________________________ Date________

Museum of History and Science

VOLUNTEER INSURANCE FORM

DATE OF BIRTH________________ SOCIAL SECURITY #______________

NAME______________________________________
LAST FIRST MIDDLE

ADDRESS___________________________________
STREET CITY ZIP

PHONE______________________

BENEFICIARY: ______________________________
NAME

____
ADDRESS

____
PHONE

______________________________ ________
VOLUNTEER SIGNATURE DATE

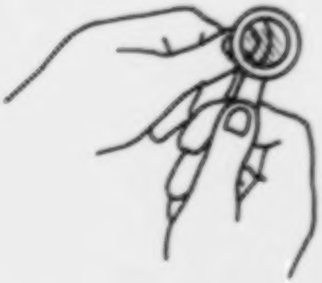
______________________________ ________
VOLUNTEER COORDINATOR DATE

7/89

Teaching Proper Use of the Magnifying Lenses*

The use of a magnifying lens is a skill that should be introduced before beginning the first activity. After teaching the skill, encourage participants to practice the skill and use their lenses whenever appropriate in activities.

Suggested procedure for teaching lens use. Demonstrate each step as all members of your group do each step.



1. Hold both the lens and your free hand in front of you (at chest level about 8-10" in front of your body). Place magnifying lens directly on top of your thumb.

2. Slowly move magnifying lens back from your thumb. What do you see? Adjust the lens so that your thumb is as big as it can get and still be in focus -- i.e. make your thumb big and clear-looking, NOT fuzzy or blurry.

3. Freeze in that position and look to see how far away from your thumb you are holding your lens.

4. Take a new object (e.g. a stick, stone, cuff of your sleeve) and hold the lens as far away from the new object as you did with your thumb. Does it work the same? (It should. Most people find that the proper distance is about 1" away from the object you are magnifying.)

5. Practice looking at 1 or 2 other objects until everyone in the group seems to have the technique down pat.

6. Explain that now that everyone knows how to properly use his/her lens, you expect to see them continue to use this scientific tool properly. Tell them that when they are doing other activity steps (e.g. using a sweepnet, digging roots, searching in leaf litter, etc.) they should put the lenses in their shirts so the lenses and strings don't get in the way. (This also keeps the youngsters from attempting to burn leaves and bugs on nice sunny days.)

7. Tell participants that everyone who uses his/her lens properly can have it to take home to continue using after our last activity. You will collect the lenses at the end of each activity, and store them between one activity and the next.

* Based on the suggestions of Urling Kingery (Denver) and Beth Lagerberg (Seattle).

6/91

Sample "Help Card"

LITTER CRITTERS

Greet and Give Today's Challenge: Show and explain what "litter" is. **DISCOVER THE DIFFERENT KINDS OF ORGANISMS THAT LIVE IN THIS NATURAL LITTER HABITAT.**

Directions: Work in **pairs**, share materials, help each other. Show materials and how to use **cards** to handle critters **gently**. **Do not dig**, carefully sort through leaves, **put habitat back**. **CAUTION** about possible biting and stinging critters. Show **boundaries**. **5 min.**

Distribute: Magnifying lenses; materials to pairs.

Remind: Repeat challenge. We'll **SEARCH** for **10-15 min.** and then we'll come back here to look at and compare what we find.

Circulate: Visit each pair, encourage, remind, share excitement, help with using materials.

Regroup: Demo Litter-Critter Wheel and tracing on Record Card. Distribute Wheels, Cards, pencils, crayons. Record/trace critters found. Help pairs. **10-15 min.**

Discuss: **ASK QUESTIONS AND WAIT FOR SEVERAL RESPONSES.**
How many kinds of animals? Which had wings?
Which areas had the most animals?
How are ones in moist litter and drier litter different?
What were some difficulties you had in recording? What changes/improvements in Wheels can you suggest?
What **generalizations** could you make about color, size and movements of litter critters? **10-15 min.**

Wrap-Up: **RELEASE ANIMALS TO HABITAT WHERE FOUND.**
CLEAN AND RETURN MATERIALS TO KIT.
CHILDREN KEEP RECORD CARDS. **3-5 min.**

Taken from Help Cards created by Mimi Kessenger (AZ) and Karen Mauck (FL)

Volunteer Portfolio (Training Packet) Contents

"Young people all too often are lost in a world in which their day-to-day surroundings are but a dull background to the daily oscillation between the classroom at school and the television set at home. They don't know about their surroundings so they don't care about them."

The way birds precisely peck up bits of food with their beaks, the delicate structures in spring blossoms, the movement of a worm; "commonplace things like these are fascinating to observe and investigate once you stop to notice that they are there."

"Children who feel the fascination of their environment are likely to want to see it cared for."

R. W. Colton

The purpose of **Denver Audubon Society's Urban Education Program** is to provide Denver children with enjoyable experiences investigating living things in their own neighborhoods.

The children participating in this program will:

- Explore the natural environment guided by adults who have a love for nature.
- Gain a sense of wonder and respect for living things.
- Develop skills for observing out-of-doors.
- Become aware of their local environment, the plants and animals that live there, and the ecological interactions of those plants and animals.
- Ask questions about the things they observe, and discover ways they can find answers to their questions.

12/87

AS A VOLUNTEER YOU SHOULD KNOW THAT...

1. You are committing yourself to help make this program a success. We will depend on your continued participation as described in your job description. See copy of job description on the back of this page.)

   In return, you'll receive from us training workshops, the materials you need to conduct activities with children, and our sincere thanks for your contributions. We also hope you'll gain personal rewards, satisfaction, and memorable experiences.

2. If illness or an unanticipated occurance prevents you from fulfilling your commitment, please let your team leader and/or the office know as soon as possible. We will try to help you find a substitute so that your group of children will be able to continue their activities as scheduled.

3. As a volunteer, you represent Denver Audubon Society. Please wear your nametag when serving as a volunteer so that you can be recognized readily.

4. Please keep your Volunteer Service Record up-to-date. It is important for us to have an accurate record of the number of volunteer hours contributed to this program. Those statistics are just as important as the monetary contributions are.

5. On your income tax, you may wish to deduct the unreimbursed expenditures you incur while volunteering for this program. For your convenience, we have added a column for recording mileage and out-of-pocket expenses on the right-hand side your Volunteer Service Record. Use it if you wish. Additional information on such deductions is available from Denver Audubon and/or from the IRS (Publication #526, "Income Tax Deduction for Contributions").

6. Denver Audubon Society carries liability insurance that covers volunteers implementing Audubon programs. The insurance company has the right and duty to defend us in an injury or damage suit and, if negligence is proven, will pay for judgements up to the $250,000 and $500,000 policy limits.

Denver Audubon Society's
Urban Education Project
860-147

12/87

BEST COPY AVAILABLE

JOB-DESCRIPTION: You will work directly with groups of 5-7 children (aged 8-12 years) conducting learning activities specifically selected for use in Denver neighborhoods.

What qualifications/background do I need to become a Volunteer? The most important qualifications are a love of the natural world and a desire to help kids discover the joys of nature by exploring with them the living things in their own neighborhoods. No previous experience in biology and/or teaching is necessary.

The activities we'll be using are simple and enjoyable, and any information necessary to lead them will be provided. You'll be exploring and discovering neighborhood plants and animals with the children... discovering how many different kinds of insects you can find, watching how birds or sow bugs react to different situations, looking for plants with unusually shaped leaves.

What commitment do I need to make? We ask you to volunteer a minumum of 4 hours/month. We need people during weekdays, after work (about 4-5:30 p.m.) and Saturdays. When you choose to volunteer time is up to you. All we ask is that once you have agreed to participate, you honor your commitment.

How will I know what to do? We will conduct Training Workshops in the fall, winter, and spring. Each volunteer will be expected to participate in one workshop each season. We'll conduct one during the week and one on Saturday in an attempt to accommodate everyone's schedule.

At the workshop you'll do some of the activities and have chances to explore living things in a typical Denver neighborhood, while becoming familiar with the program's objectives. In addition, there will be opportunities to gain ideas about working with small groups and managing equipment/materials outdoors. You'll also get to know the other volunteers you'll be working with.

You will have a planning session at your site before you and your team begin working with the children. Working with the host site staff member(s) and the other volunteer(s) who'll be serving that site, you'll schedule activities and learn about the site and the children there.

When and where will I be expected to work with children? We have set up host sites throughout Denver. The adults at each of these are genuinely excited about the prospect of Audubon volunteers taking their children outdoors to explore the plants and animals in their immediate surroundings. We'll provide volunteers with a list of the sites, describing the children at each and showing the times and numbers of volunteers needed.

You will have an opportunity to team up with other compatible volunteers, identify the sites you prefer, and work out a schedule that is agreeable for you and the host site. In most cases, you'll return to the same site about 9 times --- 3 times in each season: fall, winter, and spring.

We'll also have special programs to reach children during the summertime and will welcome your continued participation in the summer if that's possible for you.

Are there any other meetings? Once or twice a year we will have special meetings to evaluate the program and to give you a chance to learn from each other and from biologists with relevant expertise.

12/87

GUIDELINES FOR CONDUCTING ACTIVITIES

WHO'S WHO - Introduce yourself and learn the name of each child in your group. The nametags on the magnifying lenses should help you remember who's who.

PAIR-UP PARTICIPANTS - Ask each child to choose a "buddy" he or she would like to work with. Uneven numbers may mean one group has three. There are two reasons for pairing-up. The first is for safety. By pairing everyone with a buddy, help is close at hand. Tell youngsters that each individual is to stay with his or her buddy and is responsible for the buddy's safety and whereabouts. Secondly, you usually encounter more ideas exploring a new subject with someone --- discussing thoughts, sharing observations and materials. Working together also builds esprit de corps.

CLEARLY EXPLAIN THE CHALLENGE - Using the "Action" section of the OBIS Card, explain what each pair is to do. Tell children about how long they'll have to do each part of the activity and what you'll do to let them know when time is up, when to come back, etc. If you clearly define your expectations, chances are greater that your expectations will be met.

ESTABLISH THE TERRITORY - Use landmarks or brightly colored markers to define the boundaries of the day's activity site. This lets the youngsters know where they're supposed to go and keeps them within your view for safety and easy supervision.

THE ACTION - As the children explore and discover, circulate among the pairs observing, participating in the activity, and encouraging them to investigate on their own.

THE DISCUSSION - When time is up, call your group together and ask them to sit in a circle and share their findings. Discuss questions such as those found in the "What do you think?" section of the OBIS Card.

FINISH UP - Gather all materials so they can be returned in good condition, ready for the next group to use. To promote respect for the activity site, organisms that were collected temporarily for observation should be returned to the place they were found.

NOTE: We want to develop in participants a reverence for life, but at the same time encourage on-going nature study. In this regard, two special situations merit a clear statement of policy. (1.) Where there is a tremendous availability of materials (e.g. leaves and insects) and children express an interest in collecting, we should guide them on an individual basis in how to collect. (2.) In some cases it is appropriate to use study skins or insect collections from the Museum of Natural History (e.g. to look at and feel beak structure after observing feeding behavior in "For the Birds"). In introducing the use of these materials, volunteers should explain that the (e.g) "study skins" are on loan from the Museum. Only certain universities and museums have permits to legally have such specimens for study and educational purposes. It is not legal for you or me to kill and keep such birds, but we have borrowed these to enable youngsters to look at and study the birds more closely. (The skins can be touched gently, with supervision.)

12/87

DENVER AUDUBON SOCIETY EDUCATION PROJECT

Volunteer Service Record

Name ______________________________ Phone Numbers

Teammate(s) ______________________________ ____________

______________________________ ____________

______________________________ ____________

______________________________ ____________

Site
& names
of contacts ______________________________ ____________

______________________________ ____________

Volunteer Hours   Date   Activity   Optional Information
mileage, out-of-pocket expenses

Please submit this record of your participation at the end of the season, so that we can compute the total number of hours contributed to the project by all our volunteers. Thank you.

Urban Education Project
Denver Audubon Society
975 Grant Street
Denver, CO 8020

860-147

12/87

A18

DENVER AUDUBON SOCIETY, URBAN EDUCATION PROJECT
VOLUNTEER SELF-EVALUATION CHECKLIST

Some volunteers have asked for a device to help them review activities they do with kids and think about how things went. We hope this checklist will help you judge your success and identify possibilities for improvement. We also hope it will stimulate discussions with your teammates --- and encourage you to call the office whenever you have thoughts to pass along to other teams or just want to tell us about a neat discovery.

In the appropriate column, place a check after each item you did or saw your children &/or site staff doing.

	Date____ Activity:	Date____ Activity:	Date____ Activity:
Before the activity began,			
did your volunteer team review your plans for the day, check your box of materials, and agree on boundaries for each group of kids?			
had the host site assembled the designated number of children?			
did each child have a nametag and magnifying lens?			
were children organized in groups of about 6?			
did the teacher or site staff set expectations for the children's behavior?			
When you started the activity with your group of 6,			
did you clearly explain the day's challenge?			
pair up the kids?			
establish the group's boundaries?			
demonstrate the use of new tools/equipment?			
send the kids off to do the 1st "action" step?			
While the activity was going on, were			
children			
working in pairs			
searching			
carefully examining			
collecting			
handling plants and animals carefully			
discussing with each other what they were doing			
showing each other their "finds"			
enjoying and getting involved in the activity			
interacting with you			
using their magnifying lenses often			
you			
giving directions			
encouraging children's efforts			
questioning youngsters about what they saw/thought			
setting disciplinary guidelines or notifying the teacher or site staff of problems			
making suggestions to children regarding how or where to do the activity			
helping children observe or experiment to find answers to their own questions			
listening to children			
looking at what the children found			
showing children things others found			
teacher or site staff			
observing the activity			
circulating among all the small groups			
taking care of discipline problems			
taking care of first-aid problems			
participating in the activity			
asking children about/looking at what the children found			

see next page

As you conducted the activity

did you keep in mind the activity's challenge and feel the children met the challenge? ______ ______ ______

did you notice improvement in your children's observation and investigation skills? ______ ______ ______

did you do all the "action" steps? ______ ______ ______

did your group come back together periodically for further instructions or materials? ______ ______ ______

Near the end of the activity,

did your group sit down together, compare their findings, and discuss what they discovered? ______ ______ ______

did your group discuss the questions at the end of the activity? ______ ______ ______

did the children return collected plants and animals to their original spots? ______ ______ ______

did the children help clean up and return materials to the box? ______ ______ ______

did your group return to the building (or starting point) with you? ______ ______ ______

Before you left the site,

did you pow-wow with your teammates to compare results, discuss successes and problems, and decide on plans for the next session? ______ ______ ______

The objectives of our Project are listed below. Check the ones with which your children gained experiences today:

explore nature in their neighborhood ______ ______ ______

gain a sense of wonder & respect for living things ______ ______ ______

develop skills for observing ______ ______ ______

become aware of the plants & animals living in the neighborhood, the interactions between plants, animals and the environment ______ ______ ______

ask questions about the things they observe and discover ways they can find answers to their questions. ______ ______ ______

Is there anything you learned from this activity that you want to try doing next time? (e.g. something that worked well, an idea you picked up from a teammate, something you forgot to do this time)

In the office, we'd like to hear from you about any special things that happen as you work with kids. We pass along such anecdotes to our donors and to members via the newsletter. Please phone or drop us a note to tell us about:

priceless quotes (memorable things your kids said or special incidences &/or discoveries)
special observations
suggestions for making the acitivities run smoothly or
ideas you picked up that might help other volunteers.

12/87

Denver Audubon Society, Urban Education Project
975 Grant, Denver Colorado 8020
860-147

AUTUMN ACTIVITIES	September	October	Early November
Activities that require careful observation to find many different kinds of plants or animals.			
Animals in a Grassland find as many different kinds of animals on a lawn as possible.	x on days above 50°F	x	
Hopper Herding & Hopper Characteristic Game round up a "herd" of hopping insects and find out how many different kinds are in a herd.	x check site		
What Lives Here discover how many different kinds of aquatic plants and animals live in a pond or stream.	x	x	?
Plant Hunt find as many different kinds of plants as you can in study areas - compare their leaves and make a Sun Print of your favorite leaf. (Note: Students should collect soft, pliable leaves, not dry, crumbly ones.)	x	x	
Activities that involve investigation/experimentation to find out more about particular plants or animals.			
Pigment Puzzles investigate the colors in leaves, berries and flowers by separating them and solving "pigment puzzles". (Note: for more advanced students only.)	x	x	
Isopods find and investigate behavior of pill bugs and sow bugs. (Need both kinds. If you have not found both at your site, you must collect a supplementary supply of 12-15 sowbugs to inconspicuously slip into each pair's collection cup.)	x	x	?
Ants find out how ants respond to different situations. (Need a warm day and one active ant hole/mound for each pair of children.)	x	?	
Web It using spray misters, broom straws and sweep nets, the youngsters investigate spiderwebs and the behavior of spiders.	x	?	
Activities that require special resources that may or may not be at your site and that emphasize plant-animal interrelationships.			
Shake It try to find a community that matches the "mystery community" by shaking the animals out of different trees and shrubs. (Do before autumn pruning. Need at least 3 different types of plants with tiny animals.)	x	?	
Snug as a Bug make leaf homes for imaginary insects and find shelters that animals have actually constructed in and on leaves.	x if sufficient eggs and insect shelters on leaves and twigs	x	
Swell Homes find galls on plants and examine what lives in those "swell homes".	x if sufficient galls at site	x	
Back up activity that can be used at the last minute in any weather.			
Envirolopes & the Observation Game a nature scavenger hunt & game.	x	x	x

12/87

WINTER ACTIVITIES	January	February
Animal Anti-freeze find the warmest areas around the site where animals could overwinter without freezing.	x needs to be colder than 45°F outside	x
Birdfeeder Requires a minimum of two sessions. 1st session -- Each group builds a birdfeeder and places it in an area that could be attractive for birds and is accessible for filling and for viewing. Keep a record of dates birds come and what they do. 2nd session -- After birds have begun coming to the feeder, investigate their food preferences and behavior with various experiments and observations. Also examine birds close up using Denver birds poster and study skins, comparing beaks & other structures.	x	x
For the Birds investigate feeding behavior of birds at a place where birds have been preconditioned to come to food. Use study skins for close-up look at beaks & other structures.	x	x
Wintergreen measure the temperature above and beneath the snow to find what effect the snow cover has on the temperature and consequently on the survival of the buried plants. (Requires an area covered with 4" snow or more.)	x needs to be colder than 25°F	
Litter Critters search for animals in leaf litter and use a "Litter Critter Wheel" to compare the animals' body parts. (Best if done when temperature is above 40°F, so critters are moving. Can be done through 1st half of April.)		x 2nd half
Envirolopes and the Observation Game a nature scavenger hunt and observation game that can be done in any weather.	x	x
Sound Off pretend to be an animal that communicates by sound, and discover how animals find their "own kind" before the "predator" finds them. After the simulation game, listen to the sounds that real animals are making. (Recommended for 4th graders.)	x	x
Food Chain Game play a simulation game to see how animals stay alive by getting enough to eat and avoid being eaten. (The game emphasizes the relationship between numbers of predators and prey. Because of this quantitative aspect, it is recommended for 5th graders.	x	x

SPRING ACTIVITIES	April	Early May
Litter Critters search for animals in leaf litter and use a "Litter Critter Wheel" to compare the animals' body parts. (Works best when weather has been moist. "Water" the leaf litter an hour or so ahead of time if the weather has been dry.)	x	
Isopods find and investigate behavior of pillbugs and sowbugs. (Need both kinds. If you have not found both at your site, you must collect a supplementary supply of 12-15 sowbugs to inconspicuously slip into each pair's collection cup.)	x	x
Plant Hunt find as many different kinds of plants as you can in your study area, compare their leaves, and make a Sun Print of your favorite leaf.	x	x
Flower Powder find out how animals move pollen from one flower to another. (Need at least 3 different kinds of flowers with abundant pollen - e.g. dandelions, bulbs, mustards, flowering shrubs.)	2nd half x	x
Roots and Shoots find plants with roots like those of two mystery plants. (Need vacant lot or alley with lots of weeds that may be dug up.)	x	x
Animals in a Grassland find as many different kinds of animals on a lawn as possible.	2nd half x on days above 50° F	x
Ants find out how ants respond to different situations. (Need a warm day and one active ant hole/mound for each pair of children.)	x	x
Animal Diversity compare the number and kinds of insects you find in a lawn and in a vacant lot. (Need both lawn and vacant lot or grassy natural area.)		x
Envirolopes and the Observation Game a nature scavenger hunt and observation game that can be done in any weather.	x	x
Activities for places with pond or stream What Lives Here? Animal Movement in Water Water Striders Water Breathers	late x	x

5/87

SUMMER ACTIVITIES	June	July	August
Isopods find and investigate behavior of pillbugs and sowbugs. (If you have not found both pillbugs and sowbugs at your site, you must collect a supplementary supply of 12 - 15 sowbugs to take with you. Sowbugs are easiest to find in gardens under railroad ties in moist soil. The activity will NOT work unless the kids have both kinds of bugs. On hot sunny days, races should be held in the shade.)	x	x	x
Plant Hunt find as many different kinds of plants as you can in study area - compare their leaves and make a Sun Print of your favorite leaf. (Remember to take one bottle of ammonia per site.)	x	x	x
Flower Powder find out how animals move pollen from one flower to another. (Need at least 3 different kinds of large flowers with abundant pollen - e.g. dandelions, bindweed, morning glories.)	x	x	x
Animals in a Grassland find as many different kinds of animals on a lawn as possible.	x	x	x
Ants find how ants respond to different situations. (Need a warm day and at least one active ant hole/mound for each pair of children.)	x	x	x
Envirolopes and the Observation Game a nature scavenger hunt and observation game that can be done in any weather.	x	x	x
Hopper Herding & Hopper Characteristic Game round up a "herd" of hopping insects and find out how many different kinds are in the herd.		x	x
Hopper Circus investigate the behaviors of hopping animals.		x	x
Mystery Marauders gather evidence that plants are being eaten and try to identify the "suspects" who are doing the eating.		x	x
Web It using spray misters, broom straws and sweepnets, investigate spiderwebs and the behavior of spiders.	x	x	x

see next page

Page 2 of 2 - Summer Activities

	June	July	August
Shake It! try to find a community that matches the "mystery community" by shaking the animals out of different trees and shrubs.		x	x
Animal Diversity compare the number and kinds of insects you find in a lawn and a vacant lot. (Need both lawn and vacant lot or grassy natural area.)	x	x	x
Roots and Shoots find plants with roots like those of two mystery plants. (Need vacant lot or alley with lots of weeds that may be dug up.)	x	x	x
Activities for places with pond or stream What Lives Here? Water Striders Damsels and Dragons Water Breathers Animal movement in Water Habitats of the Pond How Many (bottom dwelling) Organisms Live Here?	x	x	x

6/87

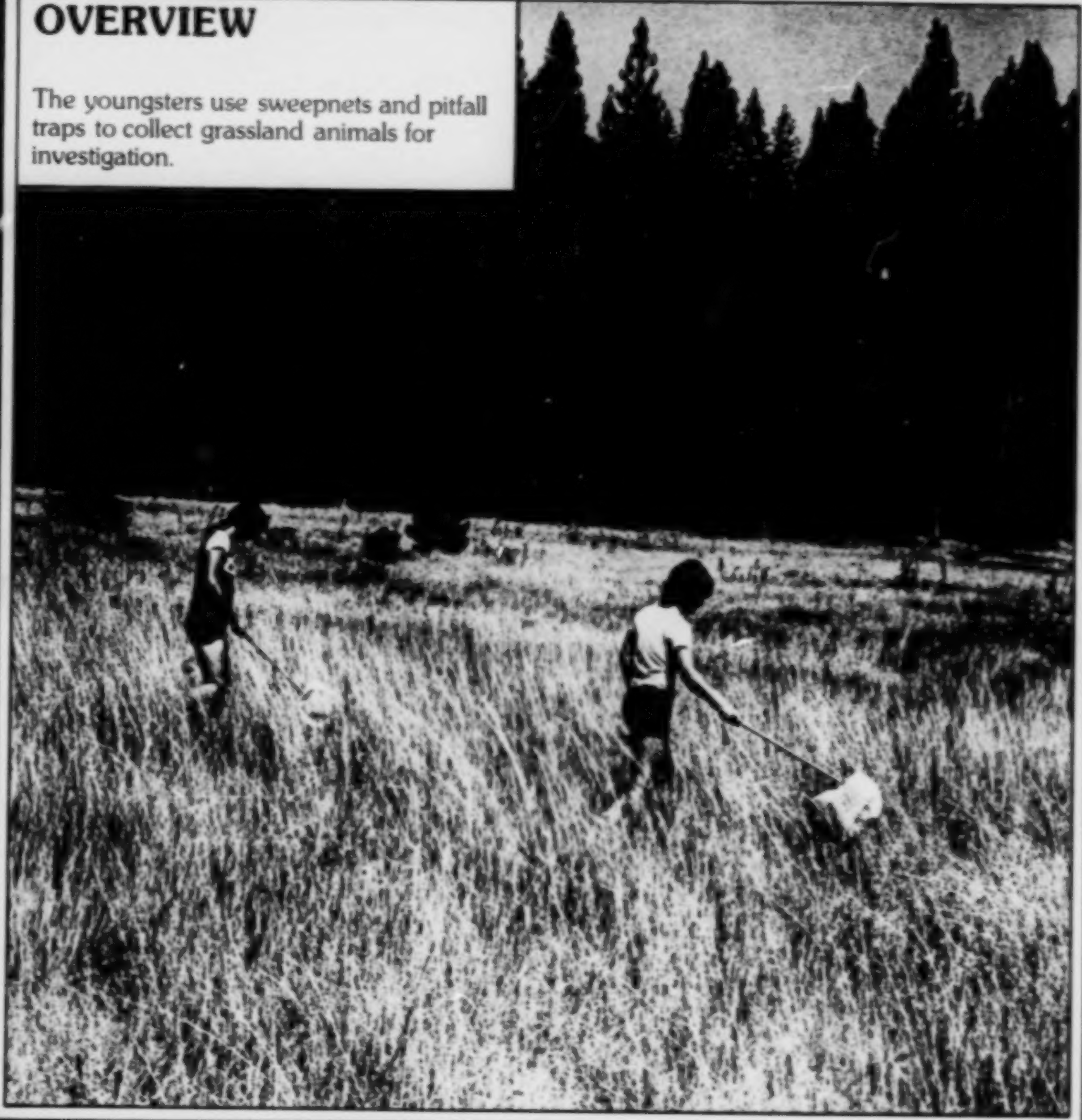
ANIMALS IN A GRASSLAND

BIO KEY

Animal Investigation
Sampling Techniques
Species

OVERVIEW

The youngsters use sweepnets and pitfall traps to collect grassland animals for investigation.



BACKGROUND

An amazing variety of small flying, hopping, and crawling animals live in lawns and other grasslands. In spite of their abundance, grassland animals are often overlooked by people because the animals are usually small and well camouflaged among grasses and weeds.

A sweepnet is a good tool for collecting hopping and flying lawn animals for observation. Flies, moths, leaf hoppers, wasps, ladybugs, gnats, and springtails are some of the animals that can be easily collected with a sweepnet from a lawn or field. Animals such as ants, beetles, isopods, spiders, and millipedes are not as effectively sampled with a sweepnet because they walk along the ground. However, they can be captured in small pitfall traps. Pill vials buried with their tops flush to the ground surface make fine traps for these animals.

CHALLENGE: FIND AS MANY DIFFERENT KINDS OF ANIMALS AS POSSIBLE ON A LAWN.

MATERIALS

For each team of two:
1 sweepnet* (See the "Sweepnet" Equipment Card.)
2 plastic bags* (25 cm × 35 cm—the size that is commonly found in the produce section of grocery stores)
1 hand lens* or bug box*
1 copy of the *OBIS Lawn Guide**

For the group:
1 data board*
1 "Sweepnet" Equipment Card*
1 marking pen*

For "Branching Out":
For each team of two:
2 10-cm × 10-cm pieces of aluminum foil* (pill vials* or tin cans with drain holes may be substituted)
1 fine-pointed trowel* or dinner knife*
small pieces of bait such as peanut butter, meat, or drops of sugar water (Peanut butter is the best bait to use.)

* Available from Delta Education.

PREPARATION

Group Size. This activity is suitable for any size group.

Time. Plan on forty to fifty minutes on a warm sunny day for this activity. If you plan to have your youngsters make their own sweepnets, allow a separate session for construction.

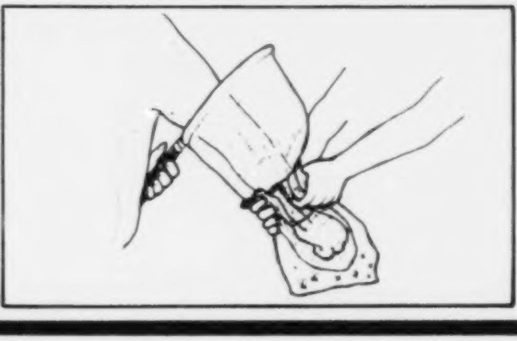
Sweepnet and Insect-Transferring Technique. Refer to the "Sweepnet" Equipment Card for directions on using a sweepnet and transferring insects to a bag for observation. Be prepared to demonstrate these techniques for the group.

Branching Out. If you intend to do the "Branching Out" activity, plan on having the kids set out the pitfall traps near the end of the session and returning to check the traps the next day.

ACTION

1. Read the challenge to the participants: "Find as many different kinds of animals as possible on the lawn."

2. Give the youngsters plastic bags and encourage them to search on "all fours." They probably will not have much success finding animals, so interrupt them after five minutes and demonstrate how effectively you can collect animals with your sweepnet. With the aid of one of



the youngsters, demonstrate how to transfer insects from a sweepnet into a plastic bag. Show the kids how to twist and secure the bag in a belt loop or under a belt while collecting more animals.

3. Divide the group into teams of two and give each team a sweepnet. Challenge the teams to collect as many insects as possible. Let the youngsters continue to sweep and add samples to their observation bags for about fifteen minutes. Team members should take turns using the nets. Encourage the youngsters to share discoveries while sweeping.

4. Call the teams together and give them a hand lens or bug box and a copy of the *OBIS Lawn Guide*. Ask the teams to identify the animals that they caught. As identifications are made, ask the teams to list the animals on the data board. Encourage the youngsters to make up names for animals they cannot identify. The names should describe how the animals look or how they behave, for example, fuzzy blue fly or green hopper.

5. While the youngsters examine their critters, mention that they should be looking for interactions between two or more animals in their bags. Are there any animals eating other animals? Is there water vapor in the bag? Is a spider spinning a web? Ask the youngsters to report any interactions that they observe. Remind the kids to keep their bags of critters out of direct sunlight.

SWEEPING THOUGHTS

1. How many different animals did you find? Check the data-board list.

2. What kind of animal was caught most frequently? Least frequently?

3. What was the biggest animal found? The smallest?

4. Which animal was the most brightly colored? List all of the different animal colors on the data board.

5. Are there animals living in the lawn that were not caught with sweepnets? If so, how could they be captured? (Mention pitfall traps for capturing animals that walk or crawl on the ground.)

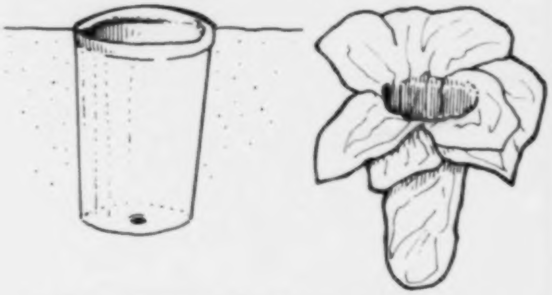
Note: Have the teams release all of their animals back into the lawn.

BRANCHING OUT

1. Pitfall Traps

a. Tell the youngsters that they will set up pitfall traps to capture animals that are not usually captured in sweepnets. Show the group how to make and place the pitfall traps.

- Place your thumb in the center of a square of aluminum foil and wrap the foil around your thumb to make an extra-long thimble. Punch a small hole in the bottom of the foil thimble to allow water to drain. (Pill vials or small cans with drain holes may be substituted for the foil traps.)



- Dig a hole in the lawn the same size as the trap, and press the trap into the hole. Flare or flatten the foil sticking out of the hole so little animals can easily walk into the traps from the surrounding grassland.

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- Place some bait into the trap.

b. Distribute trowels, aluminum foil, and bait to the teams, and ask them to set up pitfall traps.

c. As the teams work, prepare a map of the activity area on a data board. The teams should mark on this map exactly where they put their traps. This will help them locate their traps later. The kids should step off the distance from landmarks and record the distances on the data board.

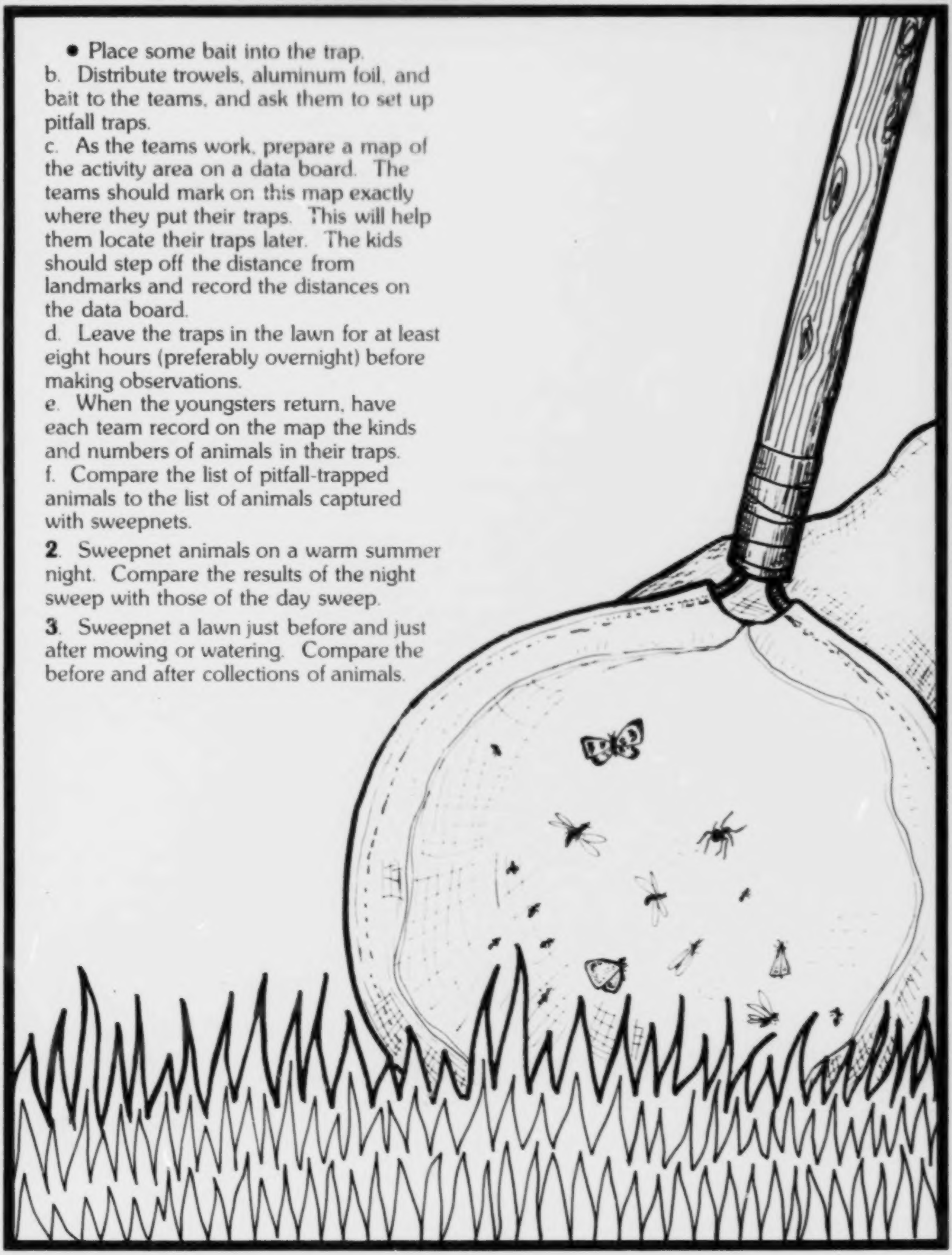
d. Leave the traps in the lawn for at least eight hours (preferably overnight) before making observations.

e. When the youngsters return, have each team record on the map the kinds and numbers of animals in their traps.

f. Compare the list of pitfall-trapped animals to the list of animals captured with sweepnets.

2. Sweepnet animals on a warm summer night. Compare the results of the night sweep with those of the day sweep.

3. Sweepnet a lawn just before and just after mowing or watering. Compare the before and after collections of animals.



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Developed by
Outdoor Biology Instructional Strategies
Lawrence Hall of Science
University of California
Berkeley, California 94720

SWEEPNET

Equipment Card **Side 1**

Note: Commercially available sweepnets* are more durable and we suggest such an investment for schools, camps, or clubs.

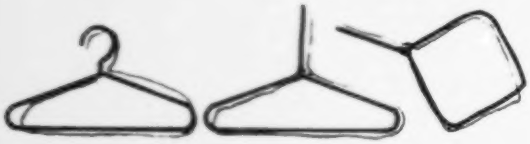
MATERIALS FOR ONE SWEEPNET:

2 wire coat hangers or 1 piece of heavy-duty wire
1 dowel or broom handle about one meter long and 1.5 cm in diameter
1 piece of nylon netting* (mosquito netting), .75 square meter
1 needle and thread for sewing (or a sewing machine)
filament or duct tape*
1 pair of pliers

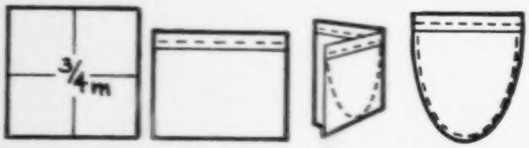
* Available from Delta Education.

MAKING A SWEEPNET:

1. Preparing the Hoop. Take the wire coat hangers, straighten the hooks and pull the hangers together into a square (one hanger on top of the other). The pliers make this job easier.



2. Preparing the Bag. Your net should be approximately .75 meter in circumference at the top, tapering down to a point. A sewing machine speeds up construction, but older kids can hand sew the nets if sufficient time is provided. Sew like this:

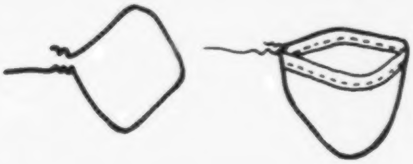


Fold one edge down and sew

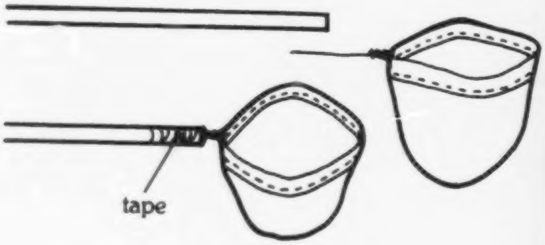
Fold square in half and sew

Cut off excess

3. Assembling the Net. Open the wire square (both squares, if you used two hangers) and thread the net on the wire (or wires).



Attach the wire hoop to the stick.



USING A SWEEPNET:

While a sweepnet can be used to pursue and capture an animal that has caught your eye, this is not the most efficient use of the net. A sweepnet is best used as a random sampling tool. You walk at moderate speed across a grassy area, sweeping the net back and forth in pendulum fashion, in front of you. The net should just brush across the top of the grass. The idea is to sweep any animals that are buzzing around in front of you into the nets, so you must turn the net in your hand to capture animals on both right and left swings of the net. After you have made fifteen to thirty swings of the net, make a quick swing around your head to concentrate the animals at the bottom of the net, and grab the top of the net in your hand to keep the catch from escaping.

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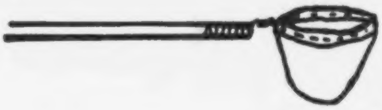
SWEEPNET

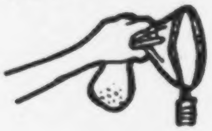
Equipment Card **Side 2**

TRANSFERRING ANIMALS FROM THE NET TO AN OBSERVATION BAG:

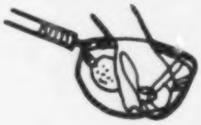
1. Concentrate the animals in the bottom of the net.



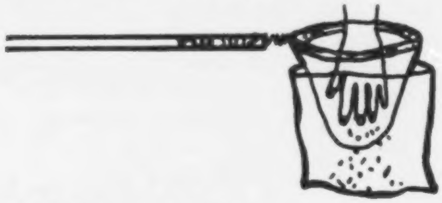
2. Pinch the net closed, keeping the animals in the bottom of the net.



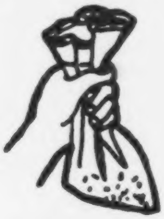
3. Turn the net inside out while holding the animals.



4. Place the net in a plastic bag, then release and shake the animals into the bag.



5. Grab the top of the bag.



6. Twist the top of the bag a couple of times and tuck the top under your belt or into an open pocket while you continue to sweep.

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(603) 889-8899

HOST SITE APPLICATION

Denver Audubon Society's Urban Education Program provides children of metropolitan Denver (ages 8-12) with opportunities to discover and investigate the plants and animals in their own neighborhoods. Each trained Audubon volunteer explores the natural environment with a group of approximately 6 children. We would like to consider the possibility of working with you and enabling your children to participate in Audubon activities. To help us learn more about your children and how our program might fit into your schedule, please provide us with the following information:

Name of School or Organization______________________________

Address______________________________

Phone number______________________________

Contact Person______________________________

Number of children that you would like to have participate__________

Grade: ______4th ______5th ______6th

Racial make-up: ______% Anglo ______% Hispanic ______% Black ______% Other

Economic Information: Median income (if known) ______________

__________% receiving financial aid (e.g. free school lunch)

Will you be able to provide a classroom teacher or a fully qualified staff member to go outdoors with each class of children to supervise? ________

Best time(s) in your schedule for Audubon activities:

_____fall,_____winter,_____spring
(3 activities will be conducted each season.)

We charge a modest fee, which covers the cost of providing each child with a magnifying lens and an array of materials used in the outdoor investigations. The fees are: $2.00 per child for one season (3 activities), and $5.00 per child for the entire school year (9 activities total). Where could you acquire funds to pay such fees?

Why would you like to have your children involved in this program?

Sometimes we have to turn down applicants merely because we do not have enough trained volunteers. If this occurs, we can train the adults you recruit and provide those adults with the instructional materials necessary to do Audubon activities with your children. If we are unable to provide you with volunteers, how many adults could you recruit to work with your children (one adult is needed for each 6 children)? _______

To show that your principal or administrator has reviewed and supports this application, please have him/her sign below.

______________________________ ______________
principal's or administrator's signature date

* Please send your completed response to: Denver Audubon Society,
Urban Education Project, 975 Grant Street, Denver, CO 8020

12/87

A32

BROWARD COUNTY AUDUBON SOCIETY

Broward Outdoor Natural Urban Studies

B.O.N.U.S. ELEMENTARY SCHOOL APPLICATION

Broward County Audubon Society's B.O.N.U.S. program provides 4th grade students with opportunities to discover and investigate the plants and animals on their own school grounds. Groups of approximately six children spend several one-hour sessions with an Audubon trained volunteer doing hands-on science/nature activities. We would like to consider working with you and your children in the Audubon B.O.N.U.S. Program.

A nominal fee of $ 2.50 per child is requested. This fee will be due after we have a confirmation and scheduling meeting and the number of participants is set. Please do not let the fee be a deterrent to a student or the school's participation.

PARTICIPATING SCHOOL SELECTION WILL BE BASED ON

1. % DISADVANTAGED STUDENT POPULATION
2. NUMBER OF VOLUNTEERS AVAILABLE
3. NEARNESS TO HIGH SCHOOLS WITH B.O.N.U.S. VOLUNTEERS
4. SCHOOLS NEW OR ONLY SECOND YEAR IN THE PROGRAM (plan for 3rd year and beyond varies slightly)

NAME OF SCHOOL ______________________________

ADDRESS ______________________________

PHONE ____________ CONTACT PERSON ____________

APPROXIMATE NUMBER OF CHILDREN IN 4TH GRADE ____________

APPROXIMATE % RECEIVING FREE SCHOOL LUNCH ____________

APPROXIMATE RACIAL MAKE-UP
% ANGLO ______ % BLACK ______ % HISPANIC ______ % OTHER ______

HOW MANY ADULT VOLUNTEERS COULD YOU RECRUIT TO WORK WITH YOUR STUDENTS IN THIS PROGRAM?
____

WHY DO YOU WANT TO HAVE YOUR CHILDREN INVOLVED IN B.O.N.U.S.?

PRINCIPAL'S SIGNATURE ______________________________

COMPLETE APPLICATION BEFORE JUNE 15 AND SEND VIA PONY TO:
BROWARD COUNTY AUDUBON SOCIETY
WILTON MANORS ELEMENTARY

Your name____

Name of School____

☐ YES. For the 1987-88 school year, we want to participate in Denver Audubon's Education project with

number of classes____, grade(s)____
These same children will participate in the
fall____ winter____ spring____.

We could meet the volunteers for a planning session after September______(date). The best time of the day is______________________. At that time we'll be prepared to set dates for the fall season (3 activity dates and an alternate rain date).

The '87-88 Audubon fall activities will be conducted between September 21 and November 7.

☐ NO. We have decided not to participate in Audubon's program during the 1987-88 school year because:

As usual, the number of schools we're able to work with will depend on the number of volunteers available during the school day. We try to allocate volunteers to sites that have participated in the past, but the only way we can guarantee your participation is if you can recruit 1 adult for every 6 students. We will welcome your volunteers to our training workshop in early September.
We will recruit ___ volunteers.☐ will not not be able to recruit our own volunteers.☐

Contact person (who shall we communicate with to finalize plans for your participation, set up planning meeting, etc.) ____

Phone number ______________, best time(s) to call ______________________________

Your name____

Name of Organization/Agency________________________________

☐ YES. For the 1987-88 school year, we want to participate in Denver Audubon's Education project with

number of children ____, ages ________.

These same children will participate in the
fall ____ winter ____ spring ____.

We could meet the volunteers for a planning session after September________(date). The best time of day is ________________________. At that time we'll be prepared to set dates for the fall season (3 activity dates and an alternate rain date, just in case).

The '87-88 Audubon fall activities will be conducted between September 21 and November 7.

☐ NO. We have decided not to participate in Audubon's program during the 1987-88 school year because:

Contact person (who shall we communicate with to finalize plans for your participation, set up planning meetings, etc.) ______________________________.

Phone number____________________,best time(s) to call________________________.

DENVER AUDUBON SOCIETY
Urban Education Project
860-1476

SITE: ______________________________
____
____

Planning Meeting Agenda

I. Introductions: Names of volunteers, site staff and phone numbers

II. Dates and times for 3 activities and 1 rain date

III. Which activities? Considerations:
- curiculum/on-going program
- resources at site
- volunteer preferences
- weather (alternatives)

IV. Preparation: Before each activity . . .

	person responsible
A. Group children (number per group =)	____________
Print nametags and group them	____________
Prepare children (see suggestion sheet)	____________
B. Schedule materials with DAS office	____________
Make sure materials are at site	____________
Return materials to DAS office	____________

V. Logistics on day of activity

A. Where to meet and return children
B. Who will supervise - be responsible for problems and first aid, if needed
C. Behavioral expectations - what rules/standards are the children used to
D. Volunteer substitutes - how to handle, phone numbers to use

VI. Fee arrangement - when can it be paid

VII. Data for record-keeping (ethnic and economic make-up of children)

VIII. Summarize and sign "Memo of Agreement"

12/87

for school sites

MEMO OF AGREEMENT

To: Whom it may concern
Re: The Participation of ______________________________ Youngsters
in Denver Audubon Society's Urban Education Project
Date: ____________

This Memo of Agreement outlines the arrangement under which Denver Audubon Society (DAS) undertakes to provide an outdoor, natural science program for your children under your institution's authority. You have previously provided to us details about your youngsters and the best times for you to schedule Audubon activities. We understand that we will work with _____ children in the ______________ grade(s) at your site.

1. Denver Audubon Society will provide ______ trained volunteers, approximately one volunteer for each six children. Denver Audubon Society will also provide instructional materials and supplies, including a magnifying lens and a name tag for each student. The team leader(s) of the volunteers will be ____ ______________________________, or their substitute(s), and the DAS educational staff person is Karen Hollweg, ph. 860-1476.

2. For the smooth running of the program, you will provide supervision by ____ ___________________________________ ("supervisor(s)") to oversee the program. Your supervisor(s) will take care of any disciplinary problems and first aid problems that may arise. Your supervisor(s) will assure that the children are assembled and ready to go outside at the time scheduled for the DAS session. The contact/liaison person who you assign to the program is ____________________, ph.______________. The best time to reach this liaison person is ______________.

3. The School District shall provide DAS a certificate of insurance evidencing the fact that the School District is insured under a general liability policy with limits of $1,000,000 which policy covers DAS volunteers.

4. After completion of the activities, DAS's education staff and team leader(s) will meet with your liaison person and supervisor(s) at a mutually agreeable time and place to evaluate the program and its value to the children at your site.

____

____
Karen S. Hollweg
Education Director
Denver Audubon Society

Please keep one copy for your files and
return one copy to: Denver Audubon Society
975 Grant St
Denver, CO 80203

for non-school sites

MEMO OF AGREEMENT

To: Whom it may concern
Re: The Participation of ______________________________ Youngsters
in Denver Audubon Society's Urban Education Project
Date: ________________

This Memo of Agreement outlines the arrangement under which Denver Audubon Society (DAS) undertakes to provide an environmental education program for your children under your institution's authority. You have previously provided to us details about your youngsters and the best times for you to schedule Audubon activities. We understand that we will work with _____ children, ages _______, at your site.

1. Denver Audubon Society will provide _____ trained volunteers, approximately one volunteer for each six children. Denver Audubon Society will also provide instructional materials and supplies, including a magnifying lens and a name tag for each student. The volunteers will be ______________________________________, or their substitute(s), and the DAS educational staff person is Karen Hollweg, ph. 860-1476.

2. For the smooth running of the program, you will provide supervision by__________________ ("supervisor(s)") to oversee the program. Your supervisor(s) will take care of any disciplinary problems and first aid problems that may arise. Your supervisor(s) will assure that the children are assembled and ready to go outside at the time scheduled for the DAS session. The contact/liaison person who you assign to the program is__________________, ph.__________. The best time to reach this liaison person is _______________.

3. You will provide liability insurance in the amounts of at least $500,000 each occurrence and $1,000,000 aggregate to protect the volunteers from liability which might arise in delivering the program to you.

4. After completion of the activities, DAS's education staff and team leader(s) will meet with your liaison person and supervisor(s) at a mutually agreeable time and place to evaluate the program and its value to the children at your site.

____

____
Karen S. Hollweg
Education Director
Denver Audubon Society

Please keep one copy for your files and
return one copy to: Denver Audubon Society
975 Grant Street
Denver, CO 8020

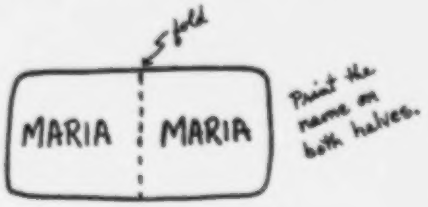
DENVER AUDUBON SOCIETY

975 Grant Street Denver, Colorado 8020 (303) 860-147

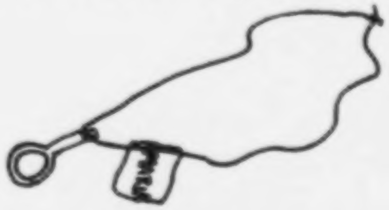
We're pleased to be able to bring Denver Audubon Society's Urban Environmental Education Project to your children. In preparation for our first session, we ask that you do two things:

1. Please prepare a nametag for each child. Print with a BOLD, PERMANENT INK marker the FIRST NAME of each child on a name tag.

   Note: Self-adhesive, 4" by 2" colored labels from an office supply store are durable and easy to read.


fold
MARIA
MARIA
Print the name on both halves.

   As soon as we arrive, we'll have each child fold the nametag around the string of his/her magnifying lens and stick it together. That way, we'll be able to keep track of each child and of each child's magnifying lens.



2. Sort the nametags into groups so that there are 6 compatible children in each group. Using clips or rubber bands, package up each group of 6 nametags so that one packet can be handed to each volunteer at the beginning of the first session. Each volunteer will continue to work with the same group of children throughout the program.

To enable us to get off to a positive start on our first session, and each succeeding session, we suggest that you:

Notify your children in advance that they will be going outside "tomorrow" to do an Audubon acitivity and remind them to wear appropriate clothing.

Assemble the children at the scheduled time and organize them into the groups you have designated.

Explain to them the purpose of the Urban Environmental Education Project (to give children opportunities to explore and investigate the plants and animals living in their own neighborhood) and introduce them to the Audubon volunteers (people who enjoy nature and want to share that with the youngsters).

Tell the children that their group will work together with the same volunteer each time they go out to do an Audubon activity and clearly set the standards of behavior you expect of them.

Explain that you will be circulating among all the groups for the next hour as they do the day's activity.

Thanks for your cooperation. 3/87

TEACHERS

Welcome to our "Hands-on" program for the students.

This project is sponsored and partially funded by Prescott Audubon Society. However, our volunteers are from the community in general - P.T.A.'s, interested community people, and predominately Audubon. Our only requirements for volunteers are a love of children and nature and the physical capacity to carry out relatively low-demanding physical tasks. We will train the volunteers so they do not need to "know nature" in order to be very effective with the students.

We assign six students to one volunteer, and hopefully that group can stay together for the entire term. One of the values of this project is the close volunteer-student relationships which develop. We provide all the materials required. For the most part each volunteer is given a packet for six for that day's activity. (Last year's experience showed us an even number was preferable to an odd number, i.e., we'd rather have two groups of four and six rather than two groups of five).

The projects basically use the buddy system for safety and student interaction, and the volunteers will arrange this.

We shall have seven sessions at each school, one per month on a specified day you will help select. These sessions will be in October, November, January, February, March, April and May.

Each session will be approximately one hour in length. The volunteer should devote (again approximately) ten minutes outlining the objectives and how to do the work, 25-30 minutes for the students to carry out the tasks, and 20-25 minutes looking over the collected materials with the students in a group, asking questions to provoke group discussion and finally returning, particularly the insects, etc., to their proper environment, and reassembling the project materials. One of our objectives is to teach respect for all living things. We do not destroy them unnecessarily.

WHAT YOU CAN DO TO HELP

The entire class is under your direction at all times we are in the field. Our volunteers are basically teacher's aids working under your supervision. You maintain general discipline. If you see anything you do not feel is appropriate, please let us know. Each volunteer will select an area appropriate for the day's activity so the groups will be spread out, but will remain in a loosely connected overall group.

Prior to our first session, would you please assign the students into the groups of six. You know them and know which will work best together. From last year we found it best to form the groups from one class. Then we can provide you with the names of the volunteers with each group.

We have a small magnifying glass for each student to be used in the projects. These will be given out at each session where they are to be used. The volunteers will collect and bag them after each session, and we would appreciate your keeping the bag in the classroom for the next session. At the end of the term these will be given to the students.

Comments from last year from both students and volunteers centered on shortness of time to get everything accomplished to give the students a sense of accomplishment and learning. One hour is short, but regrettably is our limitation. We try to provide programs sampling many aspects of nature, insect habitats, diversity of plant materials, how to see characteristics of birds, etc.; each is complete in itself. We shall try to let you know a month in advance as to what is next, and its objectives. Then, if it is appropriate and fits into your schedule, you might further address the topic in your ongoing curriculum. Please peer over the shoulders of the groups while they are working so you know what they have done; there may be post-session activities you could carry out in the classroom as reinforcement.

We are looking forward to working with you!

Written by Bob Sullivan (AZ)

Museum of History and Science

727 W. Main St. Louisville, KY 40202-2681 (502) 561-6103

URBAN ECOLOGY ORIENTATION - SUMMER

Welcome to Urban Ecology! This is an outdoor ecology class and unless notified otherwise, we will be outside everytime. Please make sure that you and your students are dressed appropriately for the weather. We will provide all materials for each activity. We will also provide each student with a magnifying lens.

We recommend the following guidelines:

1. 40 students or more: divide the students into 2 equal "group-sessions".
   Session #1 will meet from ____________ until ____________
   Session #2 will meet from ____________ until ____________
2. 40 students or less: will be taught in one large session
   from ______________ until __________________
3. Divide the students into 6 equal groups.
4. We request that one counselor join each group outside so that they may be a part of the learning experience.
5. Please notify us as to where we are to meet you and your students.
6. The high school volunteens are from ______________________
7. Please bring the magnifying lenses to each activity.

Please share this information with all others involved in Urban Ecology. Above all, HAVE FUN!!

Any questions, call me before 3pm at 561-6103.

Thank you.

Lisa Sverdlove
Coordinator of Urban Ecology

signed:

______________________ supervisor of site

______________________ supervisor of UE

CELEBRATE SPRING!

EXPLORE NATURE!!

LOOK WHAT I FOUND!
LOOK HOW THIS ONE CRAWLS!!
WHAT IS IT?
WOW!! COUNT THE LEGS ON THIS ONE!
DID YOU SEE THIS?

YES, I want to discover what's living in my neighborhood and find out what the animals do to survive.

Child's Name ______________________ Grade ____

Address ______________________

______________________ Phone ____________

Return this sign-up form to Gene Giron at Auraria Community Center as soon as possible to reserve your place. Space is limited.

For: 3rd, 4th, 5th & 6th graders
On: Saturdays 10:30 - 11:30 am
April 27, May 4, & May 11
Meet at: Auraria Community Center

Dress warmly and be ready to go outdoors.

Questions? Call Gene Giron at 534-7614

SIGN UP NOW to reserve your place!

Sponsored by: Denver Audubon Society &
Auraria Community Center

URBAN EDUCATION PROJECT
SPRING PILOT TEST EVALUATION
BY VOLUNTEERS WORKING WITH KIDS

Please note your honest opinion on this form & return to the office along with the materials.

Name ____________________

Site ____________________ Date __________

Activity Used ____________________

Number of children in your group __________

1. Preparation - Before doing this activity with children, I
   - did it at the training workshop ☐
   - read it ☐
   - did it for practice on my own or with my team ☐
   - searched for the specified plants/animals at the site ☐
   - other:

2. Materials - Were the materials you checked out from the office adequate and as described in the OBIS folder Yes ☐ No ☐
   Please note any problems:

3. Kids seemed to:
   - enjoy and get involved in this activity ☐
   - be moderately interested in the activity ☐
   - not be interested in the activity ☐

4. I think this activity should be kept ☐
   eliminated ☐

   reason(s):

5. Before a new volunteer does this activity, I would recommend to him/her that:

6. Questions/comments/suggestions:

URBAN EDUCATION PROJECT
SPRING PILOT TEST EVALUATION
BY HOST SITE STAFF

Please note your honest opinion on this form & return via the volunteers or mail to:
Denver Audubon Society
1720 Race
Denver, CO 80206

Name ______________________________

Site ______________________________ Date ______________

Activity Used ______________________________

I thought the activity was
excellent ☐
good ☐
poor ☐

It gave participating children a chance to:

	definitely	somewhat	not at all
explore the neighborhood's natural environment			
spend time outdoors with adults who enjoy nature			
increase their skills for observing out-of-doors			
discover new plants and animals and/or things about the way the plants and animals live/survive			

The reaction of the children was:

Suggestion(s) for change to improve what happens the next time the Audubon volunteers come:

Any concerns you have or problems you noticed that we should know about:

ON THE BACK OF THIS PAGE: Please describe any follow-up activities you plan to do or have done with your class to build on this outdoor experience.

Please return to:
1720 Race
Denver, CO 8020
immediately following
your observation.

URBAN EDUCATION PROJECT
SPRING PILOT TEST OBSERVATION

Name of Observer ____________________

Date ____________ Time ____________ Place ____________

Name of Activity Observed ____________________

Name of Volunteer(s) observed ____________________

Number of children in each group ____________________

→ The introduction to the activity took about ________ minutes.
(i.e. time during which the Volunteer talked to her/his whole group)

→ While the activity is going on, please observe

- the children
- the Volunteers
- the host teacher or staff member(s)

and use the checklist on the reverse side to record what you observed.

→ The Volunteer brought his/her group together at __________ (time) and spent about __________ minutes concluding the activity.

During this time, the Volunteers
__talked to the group
__asked questions
__got the children to compare their findings
__collected the materials
__conducted a discussion with the group
How many children contributed to the discussion? ________

Did you notice any evidence at the host site that the Audubon activities were being extended?
__bulletin boards/displays
__reference to additional assignments or supplementary activities after or before volunteers were at the site
__other please describe:

Questions/comments about what you observed:

A44

see next page

After observing the activity, please record what you remember observing by checking the appropriate response. If you feel you cannot judge an item, just leave it blank.

While the activity was going on, I saw children:	a lot	a moderate amount	very little	not at all
working in pairs				
searching for plants or animals				
collecting plants or animals				
looking closely at plants or animals				
discussing what they were finding/doing				
handling plants/animals carefully				
returning collected things to their original spot				
enjoying & getting involved in the activity				
interacting with their volunteer asking for information or the names of things				
asking about what they were to do				

While the children were doing the activity,
the Volunteers' interactions with them included:

giving disciplinary guidelines or reprimands				
giving directions concerning the activity				
questioning youngsters about what they saw/thought				
encouraging children's efforts				
making suggestions regarding "how to" or "where to" do the activity				
answering children's questions				
helping children find answers to their quesitons				
listening to children				
showing children things they found				
looking at what the children found				

During the activity, how many host site teachers(s) and/or staff member(s) were present? ______

What were they doing?
- circulating among the groups ☐
- handling discipline problems ☐
- handling first aid problems ☐
- participating in the activity ☐
- other:

SEASON-END EVALUATION at (site): ______________________________ Date _____

Site staff, volunteers and DAS staff (names): ____________________________

____

# kids involved _____

Black _____
Hispanic _____
Anglo & other _____

below poverty level _____
low income _____
middle income _____
upper income _____

review schedule & activities:

Ask Site Staff: How did it go? What was the response of the kids?

Comments of volunteers: positive things? suggestions for change?

Site staff: any additions? or differences of opinion?

Volunteers' role: Most positive thing(s) about the experience? areas for improvement?

Teacher's/Staff's role: During-activity: did he/she circulate? any discipline or first aid problems?

Post-activity: what did he/she do?

Did activities fit with on-going curriculum/programs? If not, can fit be improved?

Problems/limitations?

Suggestions for change?

Fee: If not paid, source of funds? anticipated date of payment?

Future participation in program: next season? next year?

STUDENT FORM

Name________________________________

Please give us your honest opinions about the Audubon Outdoor Explorations.

1. What I liked best:

2. The activity I remember most:

3. I think the program would be better if:

4. I would recommend that next year at Gilpin Extended Day the Audubon program:
   - should continue as it is ☐
   - should not be done at all ☐
   - should be done with some changes ☐

5. If this program is done next year, which kids should be in it?

6. What would you tell a new student who asked you what you did in this program?

For Volunteers Working With Kids **Your Name**________________________

PLEASE LET US KNOW WHAT YOU'D LIKE TO DO NEXT by checking appropriate responses to the items below.

→ This summer, I'd like to

___ do 3-4 activities with kids

☐ at the same site where I was this spring

☐ at a different site: ____________________

☐ at any site, I'm not particular

___ spend one day at a camp in the foothills working with 8-12 year old children

→ You can count on me to continue to test new activities with kids this coming

☐ fall

☐ winter

☐ spring

I would prefer to volunteer ☐ on weekdays

☐ after work

☐ on Saturdays

I'd like to ☐ continue at the same site

☐ try out a different site

→ As we expand the program, we'll need to call on members to help us in new ways. Please review the following list and check the ones you'd like to know more about and/or would consider doing.

___ explain the program to other Audubon members and encourage their participation

___ serve as a team leader at a site during the coming year

___ teach other volunteers at training sessions

___ substitute occasionally at another site when needed

___ take "graduates" from our neighborhood sites on 2-4 hour informal nature walks or field trips

→ Other preferences we should know about:

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For Materials Assistants Your Name ______________________

PLEASE LET US KNOW WHAT YOU'D LIKE TO DO NEXT by checking appropriate responses to the items below.

→ I'd be glad to continue to prepare materials for children to use in their nature explorations.

___ please call me when you have a project I might work on

___ I won't be available during the month(s) of _______________, but will help any other time

→ As we expand the program, we'll need to call on members to help us in new ways. Please review the following list and check the ones you'd like to know more about and/or would consider doing.

___ explain the program to other Audubon members and encourage their participation

___ organize a materials-bee at which volunteers socialize and work together to prepare materials

___ host a materials-bee at my home

___ participate in a training session and conduct activities with kids in their neighborhoods

___ take "graduates" from our neighborhood sites on 2-4 hour informal nature walks or field trips

→ Other preferences we should know about:

For our records, we'd like to know how many hours you spent making materials for the spring pilot test. Please estimate the time you contributed.

_____ hours

THANK YOU

A49

The purpose of this evening's discussion groups is to enable each volunteer who participated in the spring pilot test to give us opinions and suggestions regarding the program and to make sure those ideas are recorded.

Please find in your group:

1. a person who will record the ideas voiced in your group, and
2. someone who will keep an eye on a watch and let the group know when it's time to move on to the next topic for discussion.

Your main responsibility is to make sure that everyone in your group gets a shot at voicing his/her opinion on each topic --- and that those views are recorded. (By following the time suggestions in the left margin, your group should be able to complete its discussion by 8:45 p.m.)

Please address the following:

5 min. * This spring, what did you accomplish with your group of kids that you're most proud of? (e.g. What did the kids learn?.....you learn? What went well?)

10 min. * What else would you like to achieve with that group of kids if you had 3 - 6 more sessions with them?

10 min. * Based on your experience this spring, is there an "ideal" population of kids to work with --- kids with whom our investment of time and effort is better placed? (age?, neighborhood?, host site?)

5 min. * In return for your contribution of time and effort, we hope you've benefited by enjoying your experience and learning from it. What parts of the training you recieved were best/most helpful to you?

10 min. * What would you like to see addressed in future training sessions? In what areas do you feel the need for more preparation, experience, know-how, help? (could include skills, such as questioning techniques, background information, planning sessions with team, etc.)

10 min. * What criteria + conditions would you recommend be included in future agreements with sites? (What sould host sites do to make the relationship between the site and DAS most trouble-free and productive?)

5 min. * Any additional strengths or suggestions for improvement not yet covered?

* A name for our program and the volunteers who work with kids? (i.e. what to call you all???)

At the end of your discussion, please
- thank the people in your group
- hand out the yellow questionnaires

Thanks!

A50

TEAM LEADER JOB DESCRIPTION

A Team Leader is designated for each team of 3 or more volunteers working at a site. He/She serves as the central contact and coordinator for the team and as the chair/spokesperson for the group. More specifically, the team leader is responsible for:

- making sure that everyone at the site (staff and children), on the volunteer team, and at the Audubon Education office is in agreement as to times & dates for each activity by, for example:
    - -confirming dates and selected activities with everyone involved.
    - -coordinating any change in plans due to weather.
    - -giving volunteers your phone number so they can contact you with questions.
    - -notifying the Audubon Education office staff of the materials your team needs.

- serving as the laison between the Audubon Education staff and the people involved at your site by, for example:
    - -distributing and collecting evaluation forms to team members and site staff members.
    - -arranging for pick up and return of materials.
    - -relaying information to teammates and site staff members and communicating their views and concerns regarding the program back to the Audubon staff.

- taking the lead in assuring that your team functions well and that the program runs smoothly at your site, by:
    - -serving as the team's primary spokesperson at planning and evaluation meetings with the host site staff and communicating the outcomes of these meetings to any teammates unable to participate.
    - -getting the team together 15-30 minutes before each activity to make sure that everyone has adequate materials, has a designated territory for his/her group, and that any questions about the activity are answered.
    - -getting the team together at the end of each activity to discuss successes and areas needing improvement and to plan the team's next activity.
    - -helping new volunteers get started.
    - -making necessary adjustments (such as redistributed kids among existing groups) when a team members is absent or when other unexpected situations arise.

Since the team leader will be the contact person for that team of volunteers, the Audubon coordinating staff will be in touch with you regularly asking for your opinions, and providing you with new information and ideas based on the experiences of others. By passing what you learn back and forth, you will be a key link in the network of volunteers and staff that makes Auduboon's Urban Education Project work.

Time Committment: Team Leaders spend 3-4 hours/season in their leadership role in addition to the 8-9 hours/season that they contribute as education volunteers.

CHECKLIST OF PROJECT COMPONENTS - When the project is in use, what do you see?

As the activity begins			**Other/describe what you observe.**
Children are excited to see "their" volunteer/leader and anxious to go outside.*			
organized in groups of 6.* (Some groups may have 1 or 2 more or less.)	in groups of 4 to 8.	in groups smaller than 4 and/or larger than 8.	
Volunteers/leaders have their children come together in a circle.*	have their children loosely collected.	do not collect their children in a group.	
issue the "challenge" to their children.*	do not issue the "challenge."		
clearly explain to their group what to do and show how to use the materials/tools.*	explain more or less what to do.	give confusing directions about what to do.	
show the group the boundaries of their study area.*	do not point out the group's study area.		
As the activity proceeds **Children are outdoors** in pairs and/or small groups spread over an area adjacent to a school or community facility.*	in pairs and/or small groups in a natural area or park.	in large group or together as a class.	
The learning activity in use is: One of the selected activities that is appropriate for the day's conditions and that focuses on locally occurring plants, animals and/or habitat.*	an activity inappropriate for the day's conditions.	an activity other than those recommended.	
Each volunteer interacts with children, individually, in pairs, and as group - - listening, questioning, directing, and encouraging.*	talks to the group most of the time.	provides little guidance to his/her group.	

Tools and simple scientific equipment				
are being used by pairs and individual students.*	are only being used by some children.	are used primarily by the volunteer	are not apparent.	
Children seem to be				
very involved in the activity.*	somewhat interested in all or parts of the activity.	interested in something unrelated to the activity.	bored and/or passive	
Children are interacting with				
each other, their volunteer, the plants and/or animals and/or habitat being investigated in the activity.*	other people and things unrelated to the activity.	no one and/or nothing.		
The host site staff is				
circulating, observing, and ready to take care of discipline or first aid problems.*	intervening occasionally, as needed for discipline, etc.	participating with one group.	doing something seemingly unrelated to the activity (correcting papers, talking, etc.)	not visible, perhaps in building.
At the end of the activity				
Each group of kids and volunteers				
cleans and reassembles their equipment.*	disbands with no responsibility for equipment.			
discusses and compares their findings.*	makes no comparisons, has no discussion.			
talks about their next session.*	makes no reference to future sessions.			
The teacher and the class				
discuss their findings and integrate the activity into their ongoing curriculum.*	return to their regular classroom activities or go home without further reference to the outdoor investigation.			
The volunteer team				
discusses successes and problems with reference to future activities.*	departs without further reference to the program and/or what comes next for this group.			

*denotes the ideal, as defined by the project originators and author.

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9

Proposal for Appeal to Members for Urban Education Project

Number of Members:

In Metro Area	Can get Phone #'s for	Can reach and and talk to	
2,800	±1,500	±825	with 70 people or 23/night for 3 nights (18-19 phones)

1. How to approach:

   Newsletter article and bulk mailed letter with return envelope.
   Phone call with mail follow-up to those talked to.

2. Who to approach:

   All members in metro-area. (No long distance calls.)
   NO phone calls to people who've reacted negatively to annual appeal phone calls.

3. When:

   March (1st week?)

4. Incentives:

   Match or challenge contributions with deadlines for responding.
   (Many possible sources.)
   Winter birds poster for $20 or higher donations.
   (To encourage 1st time donors.)

5. Board participation

   Goal of 100% contributing some amount.
   One night (3 hrs) involvement in phonathon.

11/12/86 KH

DENVER AUDUBON SOCIETY

February, 1987

THE URBAN EDUCATION PROJECT
Teaching Children by Training Volunteers

> " The kids had never thought about the activities you did with them. I could see the light flashing on in their brains. --Education Director, Boys Club
>
> " Your program's value is that it's hands-on--they were doing it. Someone else wasn't doing it for them. --Teacher, Holm Elementary
>
> " It was valuable for us, as citizens, to see how schools work today. It's clear that they need us and benefit from these activities.
> --Volunteer, McKinley Thatcher

Dear Member,

Those are just a few representative compliments which our Urban Education Project has earned in the past three years. The Project trains Audubon members to explore nature out-of-doors with small groups of children in the neighborhoods where the children live and go to school.

Since its modest start in 1984, the Project has compiled an impressive track record:

o 2,344 children have participated, a third of them from families living at or below the poverty level, and almost half of them from racial and cultural minorities;

o 144 Audubon volunteers have worked directly with the children, and another 125 have helped out behind the scenes;

o 28 Metro Denver sites have joined us, including schools, community centers, libraries, Scouts, and Boys and Girls Clubs;

o 29 hands-on natural sciences activities have been developed, covering all seasons of the year and all contingencies of weather.

And now we have come to a critical crossroads. The lion's share of the funding for all these solid accomplishments has come from a one-time start-up grant from the National Science Foundation. This coming August, the grant will end and Denver Audubon will be on its own.

The Board and the fundraising committee have responded to this need with a thorough campaign which has targeted dozens of Metro area foundations and businesses. But we need your support, too, because every potential donor wants to know whether Denver Audubon's members really stand behind the Project.

I can truthfully say that many small contributions are more important now than a few big donations, because what we need is convincing evidence of broad

see next page

support. I'm pleased to say that both the Board of Directors and the Education Committee have reached 100% participation through gifts and pledges.

Our basic request is for a contribution or pledge of $10. If you are able to give $20, we can offer a special gift--a first-edition poster of Denver's Urban Birds, painted expressly for the Project and autographed by wildlife artist David Besenger. And, of course, a still larger contribution would bring you the satisfaction of being a major supporter of the Project. For example, $100 will buy all the materials needed for an entire classroom of children.

Of all Denver Audubon's many accomplishments, I can think of none which better exemplifies our commitment to conservation for tomorrow through education today. The Project can help educate wise future leaders and good stewards of our natural resources. Please join me in making the most generous gift possible to our Urban Education Project.

Very sincerely,

Bruce Paton

Bruce C. Paton, M.D.
President

Encl.

Contributions are tax-deductible under IRS regulations.

********** CONTRIBUTION / PLEDGE FORM **********

Please accept my contribution of _____ $10
_____ $20 (Please send Urban Birds poster)
_____ Other amount.

I would like to pledge $_______ which I will pay in the month of __________.

I understand I will receive a poster of Denver's Urban Birds if I contribute $20 or more.

(If you are sending a check imprinted with your name and address, you need not fill out the following.)

NAME ____

ADDRESS ____

____ ZIP ______________

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DENVER AUDUBON SOCIETY

February 23, 1987

Thank you very much for giving an evening of your time to the Urban Education Project. Thousands of children and more than two hundred volunteers have already participated in the Project, so you're in good company!

We have you scheduled as follows:

DATE: ___Monday, March 2
___Tuesday, March 3
___Wednesday, March 4

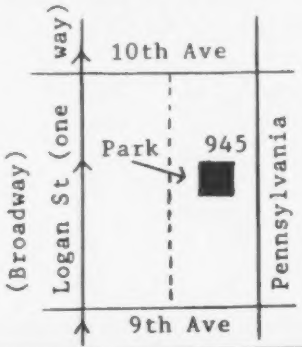
TIME: 6:00 p.m. Arrive, supper.
6:30 p.m. Slide show about Project, coaching in phoning and pledge-note writing.
7:00 p.m. Start phoning.
9:00 p.m. End phoning, prompt departure.

PLACE: Colorado Outward Bound School, 945 Pennsylvania Street (see map). There is parking behind the building, reached from the alley, and in the driveway on the north side of the building. Also parking on the street (this is a populous residential neighborhood and parking may be scarce after work).

PHONE: If you need to reach us before the phonathon, call 399-3219 or 399-2076 (Denver Audubon office). If you (or a babysitter) needs to call during the phonathon, the number iis 831-6966 (Outward Bound office).

We will provide a simple but filling supper; an orientation slide show about the Education Project; coaching on how to make the phone calls and write the pledge confirmation notes; a script to use on the phone; and our sincere thanks for your hard work in a good cause.

You can help prepare yourself by reading the enclosed Urban Education folder and thinking of questions you might want to ask if you were at the other end of the phone line.



Cathy Pomeroy, Fundraising Chair
Steve Truitt, Committee member
Brad Snyder, Denver Audubon staff
Karen Hollweg, staff
Esther Grubbs, staff
Marcia Cohen, staff

DENVER AUDUBON SOCIETY March 1987

Urban Education Phonathon Script

1. Identify yourself and the organization.

HELLO. THIS IS (Your Name) FROM DENVER AUDUBON SOCIETY. IS (Member's Name) THERE, PLEASE?

[If member is not available, ask when we could call back and note on donor card.]

MY NAME IS (Your Name) AND I'M A VOLUNTEER FOR THE DENVER AUDUBON SOCIETY. THERE'S A GROUP OF US HERE CALLING MEMBERS, AND I'D LIKE TO TAKE TWO OR THREE MINUTES TO TELL YOU ABOUT OUR PLANS FOR THE URBAN EDUCATION PROJECT. WOULD NOW BE A GOOD TIME?

[If now or later you sense the member is strongly negative about this call, do not argue or persist. Instead, say:

THANK YOU FOR SUPPORTING AUDUBON, AND PLEASE ACCEPT MY APOLOGIES FOR DISTURBING YOU.

People may not be interested in anything more than the magazine, or they may have dropped their membership since our labels were printed. If they ask never to be called again, note that on the donor card.]

2. Establish rapport and interest.

WE'RE VERY EXCITED ABOUT THE PROJECT, AND WE HOPE YOU CAN HELP US REACH THOUSANDS MORE CHILDREN IN THE YEAR AHEAD.

PERHAPS YOU RECALL READING ABOUT THE EDUCATION PROJECT IN THE NEWSLETTER, OR IN THE PRESIDENT'S LETTER WHICH JUST WENT OUT TO MEMBERS?

[This is the place for you and the member to converse freely about the Project for a short time. Consult Fact Sheet for some points that could be mentioned. If the member knows about it and wants to talk--fine! That will make asking for the contribution easier. But if the member doesn't know much about it, don't make him/her feel ignorant by reciting too many facts--move quickly to the next segment.]

[If the member is not receiving mailings, check address against label on donor card.]

3. Explain the benefits.

IN A NUTSHELL, THE EDUCATION PROGRAM TRAINS AUDUBON MEMBERS TO GO INTO SCHOOLS AND COMMUNITY CENTERS TO TEACH CHILDREN ABOUT NATURE THROUGH HANDS-ON OUTDOOR ACTIVITIES. SO FAR MORE THAN 2,000 CHILDREN HAVE PARTICIPATED, AND MORE THAN 200 OF OUR MEMBERS HAVE VOLUNTEERED FOR THE PROJECT.

WE'VE FOUND THAT MOST CHILDREN LEARN ABOUT NATURE ONLY FROM BOOKS AND TELEVISION. THEY SELDOM GO OUTDOORS TO EXPLORE WITH ADULTS WHO LOVE NATURE. SO THAT'S WHAT OUR PROGRAM IS ALL ABOUT.

WE'RE VERY PROUD OF EVERYTHING THAT WE'VE ACCOMPLISHED SO FAR. DO YOU HAVE ANY QUESTIONS ABOUT THE PROJECT?

[Again, don't attempt to argue a member out of a negative view. If you're asked a question you can't answer, don't fake it! Note the question or problem on the donor card so someone from the Education office can call the member back.]

4. Ask for a contribution.

TO KEEP THE PROJECT GOING IN THE YEAR AHEAD, WE'RE ASKING DENVER-AREA FOUNDATIONS AND CORPORATIONS FOR THOUSANDS OF DOLLARS IN GRANTS AND CONTRIBUTIONS. AND ONE QUESTION THOSE BIG DONORS ALWAYS ASK IS WHETHER OUR OWN MEMBERS ALSO CARE ABOUT THE PROJECT.

SO I'D LIKE TO ASK YOU TO SUPPORT THE EDUCATION PROJECT -- AND HELP US GET THOSE CORPORATE AND FOUNDATION GRANTS -- BY MAKING A CONTRIBUTION OF $10 OR $20.

$10 IS THE BASIC CONTRIBUTION WE'RE ASKING FOR FROM ALL OUR MEMBERS. BUT IF YOU CAN CONTRIBUTE $20 OR MORE, WE CAN GIVE YOU AN ORIGINAL POSTER OF DENVER'S URBAN BIRDS, AUTOGRAPHED BY THE ARTIST. DO YOU THINK YOU COULD HELP IN EITHER OF THOSE WAYS?

[If yes, take pledge. Or:]

MAY I TELL YOU MORE ABOUT THE POSTER? IT'S BY WILDLIFE ARTIST DAVID BESENGER. HUGH KINGERY, THE AUTHOR OF THE "BACKYARD BIRDS" COLUMN IN OUR NEWSLETTER, HELPED DESIGN IT. THE POSTER IS IN FULL COLOR AND DEPICTS TYPICAL BIRDS AT A DENVER BACK YARD FEEDER. AND YOUR COPY WILL BE AUTOGRAPHED BY THE ARTIST. WE CAN SEND YOU ONE FOR A CONTRIBUTION OF $20 OR MORE.

MAY I WRITE DOWN THAT YOU'LL PLEDGE $10? OR $20?

[There are now three options--Yes, No, and Maybe.]

5 A. Ending for people who definitely do *not* wish to contribute.

WELL, I GET A LOT OF REQUESTS FOR FUNDS MYSELF FROM MANY WORTHWHILE ORGANIZATIONS, AND I KNOW IT'S HARD. DO YOU THINK YOU MIGHT BE INTERESTED IN HELPING AS A VOLUNTEER? [If yes, check address and phone.] THANK YOU VERY MUCH FOR YOUR TIME AND YOUR INTEREST IN AUDUBON. GOOD NIGHT!

5 B. Ending for people who *do* make a pledge or say they *will consider* a contribution.

I'M GOING TO SEND YOU A DENVER POST ARTICLE ABOUT THE PROJECT, TOGETHER WITH A PLEDGE RETURN ENVELOPE. [If they say they already have the return envelope, note "no envelope" on donor card.] SO LET ME CHECK YOUR ADDRESS.

I'VE ENJOYED TALKING WITH YOU, AND I KNOW I SPEAK FOR THOUSANDS OF KIDS AND HUNDREDS OF VOLUNTEERS IN SAYING "THANK YOU." GOOD NIGHT!

BEST COPY AVAILABLE

DENVER AUDUBON SOCIETY

975 Grant Street Denver, Colorado 8020 860-147

Education Project phone number: 860-1471

FACT SHEET
for Denver Audubon Society's
Urban Education Project

- Started in 1984 to provide environmental education opportunities to Denver's children

- Basic concept is to train adult volunteers to explore nature with small groups of children in their own neighborhoods

- Almost 3,000 children have participated
  - one-third from families living at or below poverty level
  - almost one-half from racial and cultural minorities
  - primarily for 8 to 11 year-olds (4th and 5th graders)

- More than 250 adults have volunteered their time
  - some work with students at schools on weekdays
  - some work with kids after work or on Saturdays at community centers, libraries, Boys and Girls Clubs, Scouts
  - some help out behind-the-scenes

- Has received over $200,000 in funding in its first three years
  - National Science Foundation, major grant to develop model project
  - Denver Audubon members
  - Private foundations
  - Corporations and other businesses
  - 100% of Denver Audubon Board of Directors and Education Committee members have contributed to this appeal
  - We are not receiving funds from National Audubon for this project

3/87

DENVER AUDUBON SOCIETY

TIPS FOR SUCCESSFUL PHONATHON CALLING

Thank you for giving your time to help make this evening a success. We have a tremendous opportunity to inform many members about the Urban Education Project and to cultivate the participation of each person you talk to on the phone. We want to make as much personal contact as possible.

Everyone you will phone is a Denver Audubon member. They are nature lovers, like you and me, committed to conservation through education and action. Each completed call should take about 5 minutes. So with "no-answers" and record-keeping, you could make 12 to 20 contacts this evening.

Some of the people you'll talk to have previously made contributions to Denver Audubon (annual appeal or birdathon, for example) and some of them have already worked as volunteers (in the Education Project or with the Conservation Committee, for example). Others will be brand new members who know little or nothing about Audubon or this chapter. Some will say "Yes" to you right away, and others may want to tell you all the things that are wrong with Audubon and the world. So, in short, try not to have any preconceptions about the people you are calling. So be attentive, be receptive, be polite, and be relaxed.

We are asking each person called to give at least $10. If all 3,000 members would do so, we'd have raised a lot of money! Our more "realistic" goal for this appeal is $7,000, which equals $10 from 700 members or $20 from 350 members. So don't worry about the ones who don't or can't contribute, and remember to say "Thank You" to those who do.

1. Your voice reflects your mood--dial with a smile!

2. Listen to yourself (don't just recite the script).

3. Listen to the people you're calling. The telephone wire has two ends--use both! You should be able to sense their interests and tell when they are making a decision.

4. Use the "donor card" to help us keep good records. In addition to filling in the blanks provided, feel free to offer any comment that will help us know what's on the members' minds. If they won't give to this appeal but would like to work on the newsletter, for example, just write that down.

5. Don't be in a hurry. At the end of the conversation, review what has been said and agreed upon.

Materials to aid you:

Donor cards, script (feel free to substitute your own words), Fact Sheet, pens, scratch paper, etc.

ONCE AGAIN, MANY THANKS!!

DENVER AUDUBON SOCIETY
Urban Education Phonathon, March 1987

Member's name
Address

Phone number

____

PLEDGE: Yes___ No___ Other________________________

AMOUNT: ___________ CALLED BY: ______________________

ADDRESS CORRECT: Yes ___ No ______________________

VOLUNTEER PROSPECT? ______________________________

OTHER COMMENTS: __________________________________

PLEDGE ENVELOPE PREPARED BY: ______________________

***** Office Use Only *****

AMT REC'D $______ DATE REC'D ______ ACKN SENT ______

DENVER AUDUBON SOCIETY
Urban Education Phonathon, March 1987

Member's name
Address

Phone number

____

PLEDGE: Yes___ No___ Other________________________

AMOUNT: ___________ CALLED BY: ______________________

ADDRESS CORRECT: Yes ___ No ______________________

VOLUNTEER PROSPECT? ______________________________

OTHER COMMENTS: __________________________________

PLEDGE ENVELOPE PREPARED BY: ______________________

***** Office Use Only *****

AMT REC'D $______ DATE REC'D ______ ACKN SENT ______

DENVER AUDUBON SOCIETY

URBAN EDUCATION PROJECT PHONATHON

Instructions to the "Mail Room"

Everyone who makes a definite pledge (dollar amount named) or says "maybe" gets a three-part letter from us:

1. Pledge note:

   White - for definite pledges, fill in dollar amount. Add greeting ("Dear Mary," or "Mary--") and sign first name of our volunteer who made the call.

   Gray - for the maybes. Add greeting and caller's name as above.

2. *Denver Post* article about the Project.

3. Return envelope:

   You may omit the return envelope if so instructed on the donor card which comes from our caller (this would be the case if the member has received our mailing and has the envelope "already on my stack of checks to write").

After you've addressed and stamped the envelope, fill in your name on the line PLEDGE ENVELOPE PREPARED BY: at the bottom of the donor card. Please keep these cards for which envelopeshave been prepared separate from all others. And if you're not able to complete all the pledge envelopes at the end of the evening, make a separate bundle of ones that need to be done and label them.

DENVER AUDUBON SOCIETY
1720 Race Street Denver, Colorado 8020 (303) 399-321

Thank you very much for your pledge to Denver Audubon's Urban Education Project. I hope you will enjoy the enclosed article from the *Post*--your support will make it possible for many more children to have the same wonderful experience. It was a pleasure talking with you!

Sincerely,

D.A.S. Volunteer

Amount pledged:

P.S. Your contribution is fully tax-deductible under IRS regulations. If you would like a receipt (in addition to your cancelled check), please note that when you send in your pledge.

DENVER AUDUBON SOCIETY
1720 Race Street Denver, Colorado 8020 (303) 399-321

I enjoyed talking with you this evening, and I appreciate your willingness to consider a contribution to Denver Audubon's Urban Education Project. The enclosed article from the *Post* describes the wonderful experience which many more children will be able to have with your support.

Sincerely,

D.A.S. Volunteer

P.S. Contributions to Denver Audubon are fully tax-deductible under IRS regulations.

Publications Cited

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Materials Appendices

You can't get kids and volunteers involved in netting insects, sorting leaves, using magnifying lenses, and digging out the roots of weeds, unless they have tools and materials to use. Because preparing the materials and supplies for this program is a major task and a different kind of responsibility from working with kids, we've found it best to have a special group of materials volunteers for this job. (See job description for Materials Volunteers, page 32, and "Assembling Materials and Supplies", pages 46-49.)

This section deals exclusively with the kits of materials and the materials volunteers needed to make this program work. We've learned a lot in the last seven years and hope that by sharing these things, we'll help you avoid some time-consuming and frustrating pitfalls.

First of all, our **Four Cardinal Rules**:

1. Once you know which activities you'll be doing (See "Selecting Appropriate Learning Activities", pages 22-24), **make one kit of prototype materials for each activity and try them out to make sure they work**. This can save a lot of back-tracking and headaches, and will give you the set of items that you need to provide to your volunteers as "models" so they can make many sets of these materials.
2. **Organize volunteers to make the proper amounts of materials** once you have figured out how many kits of materials you need for each activity. (Remember that you need one kit for each volunteer and six children, but that, for example, the Thursday volunteers could use the same kits as the Monday volunteers as long as the kits are cleaned and resupplied between uses.) If there are things that need to be made **prior to assembling** the kits (like sweepnets or "Litter Critter Wheels"), making items and assembling the kits may be a two-step process.

   Whatever you do, **DON'T** decide that you're going to do all the materials yourself! It may seem like a small task to make "just" the first four kits "yourself", but your program will never be able to grow and you'll soon begin to feel like you've been committed to a sweat-shop for life if you don't get others involved from the beginning. There are many volunteers in your community who would enjoy contributing to your project by serving as materials volunteers. See pages 21, 30, 33, 37 and 38 for some suggestions.
3. **Devise a system for re-stocking and circulating the kits**. This too needs to involve volunteers. Volunteers working with kids and using the kits must take responsibility for returning the kits in good shape. Training workshops must include cleaning and re-assembling materials at the end of each activity, and team leaders must supervise their volunteers in checking the kits as a standard pre- departure routine. In Seattle, a supply of "extras" circulates with the kits so that FUN volunteers can re-stock their own kits. One person in each FUN volunteer team is responsible for passing the kits and extras along to the next team.

In most other cities, the kits are returned to a central location, checked and re-distributed, before being sent out to a new site.

4 **Get space with shelves to store the kits.** How much space? About 50 feet of wall space with shelves typically holds enough materials for a year-long program that involves 600 students at a time. Ideally, the space will also have a large table at which volunteers can work, and it will be located near a door that opens onto a parking lot or loading dock (to simplify loading and unloading kits).

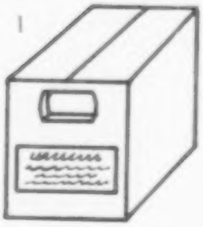
If your space does NOT have shelves already, metal shelves (the kind that go together with nuts and bolts like an erector set) should be one of your first purchases. Assembling the shelves is another super task for the right volunteers.

If you are in need of space, the sites you serve may have extra space to loan your program rent-free. This in-kind contribution could be worth over $1,000/year.

Packaging Options for Your Kits

Your climate and the amount of storage space available are important to consider before you decide how to package your kits of materials. In Denver, we used **boxes* with cut-out handles** for most of our kits (illustration 1). Boston used **brown grocery bags inside transparent plastic grocery sacks**—with the outer sack providing handles and serving as a moisture barrier (2). They found they could jam lots of these into their limited storage space. Louisville started using **soft drink/soda pop flats *** (the 2 1/2" deep boxes that hold 24 12-oz. cans) (3), and Prescott and Ft. Lauderdale adopted this mode of packaging for all their materials. By using one flat as a bottom and another flat as the lid, you can make a set of four or more kits that store on a shelf like library books and can be easily toted to and from a car as a stack, held together by a bungee cord (shock cord) which is about 26" long. In the meantime, Louisville bought dozens of **inexpensive day-packs** and put each set of materials into a pack. All the packs/kits for an activity are put in the same large **plastic tote bin** with a lid so they are easily loaded in a vehicle and delivered to the next site using them (4). Louisville's teen volunteers like toting around the materials for their six kids in the day-packs.

1



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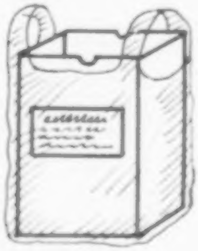

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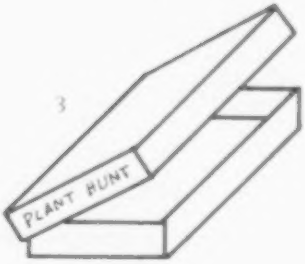

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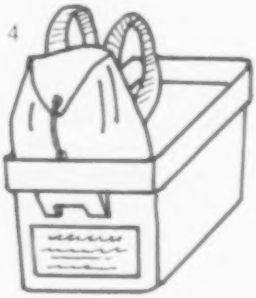


Standard Materials Used in Several Activities

There are some standard materials that are used in several different activities:

data boards - one for each volunteer's group
sweepnets - 3 per group
marker flags - 4 per group
magnifying lens on necklace - 1 per child and 1 per volunteer
folded labels for magnifiers (see page A38) - 1 per child and volunteer

Because they take a bit of time to make and are things volunteers enjoy making and make well, we suggest you put together a model or two of each, decide how many you need, and get some volunteers started on making these right away. Instruction sheets telling how to make each item are included on the following pages.

Ordering Materials from NAAEE

To facilitate start-up of VINE Programs, NAAEE stocks OBIS investigations that work well in urban neighborhoods, magnifiers, *Lawn Guides*, and additional materials needed for your kits. For a current price list and order form, phone or fax 513-676-2514.

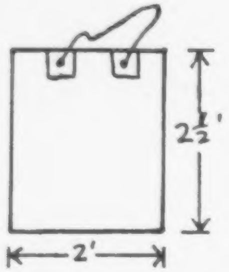
---

* Talk with the manager of a large grocery store and see if he/she won't save a number of the kinds/sizes of boxes you need.

INSTRUCTIONS FOR MAKING DATA BOARDS**

Use heavy cardboard from large appliance boxes, etc.
Suggested sources:
The dispatch office/warehouse of a large appliance retailer (see yellow page listings in your phone book.) Ask when their delivery trucks come in and if they will save the empty boxes for you. Bike shops may also save and give you used shipping cartons.

Cut the board into 2' x 2 1/2' size.



Put duct tape over top edge about 1' apart. The duct tape should go down about 2 1/2" on the front and back side of the board. Poke holes in the tape. Thread heavy cord 1 yard long, through the holes and tie to create a "shoulder strap" for ease in carrying data boards.

Purchase butcher or poster paper -- 1 roll white 24" wide, 25 yd. long from a large office supply warehouse or paper store. (See Paper Products and Office Supplies in your yellow pages.) We prefer the "heavyweight" or the heaviest weight that is available so that the marker pen ink doesn't bleed through to the next sheet of paper. (Price in Denver, 1988, $26.00) Long strips of recycled/used 15" wide continuous form computer paper may be used instead of butcher paper.

Cut the 2' wide paper into sheets 2 1/2' long. Attach to boards with medium size IDL clips - 2 at the top edges and 2 at the bottom edges of the cardboard. (We use 5/8" capacity, 1 1/4" wide binder clips from an office supply store.)

Tie a 4' string to the top left "binder clip" handle -- run it over to the right-side clip and loop it around once or twice. Bring the string back to the left clip -- loop around the clip handle and attach an indelible ink, 1/4" wide felt tip marker* by wrapping string around pen and taping it. (The string keeps the pen attached to the data board, ready for use. We wrap the string around the clip handles so that it doesn't get tangled during storage and transport.)
The Texas project puts the marker in a sandwich-size ziplock bag and clips the marker-bag to one corner of the databoard. This also works well.

*NOTE: Warn the volunteers that magic markers sometimes leak (i.e. "boil over") when left in a hot car. (When boards are returned, check to see if the marker still works.)

**In damp climates, projects have used 24" x 36" sheets of tagboard/oakboard laminated on the school district's machines, as a waterproof alternative to these data boards. Remember that in activities like "Plant Hunt", "Animals in a Grassland", "Mapping a Study Site", and others, students need to write and/or draw on the data boards--so you'll need to create a means for cleaning the marker pen ink off of these laminated sheets at the end of each use.

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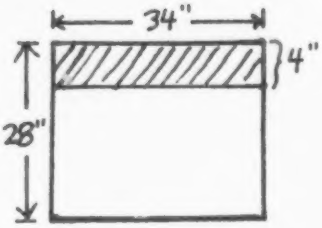
INSTRUCTIONS FOR SEWING BAGS FOR SWEEPNETS

Please make _______________nets as follows:

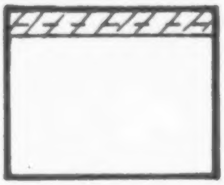
1. For each net, you need two pieces of fabric:

   34" x 28" old sheer curtain
   34" x 4" unbleached muslin
   thread

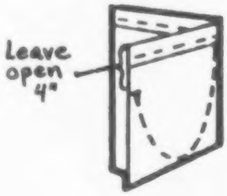


2. Place the muslin strip along the top edge of the sheer fabric. (See drawing.) The muslin reinforces the edge around the metal rim of the net.

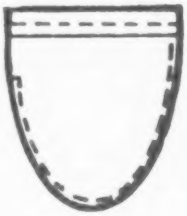
   Fold down the top edge and sew -- to make casing for wire rim.



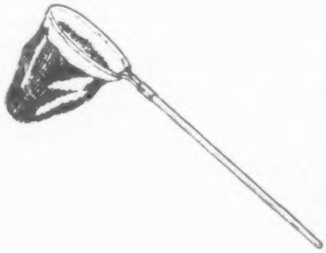
3. Fold fabric in half and sew bottom of net bag as shown. The shape of the bottom of the bag should come to a rounded point -- this makes it much easier to concentrate the insects in the bottom.



4. Cut off excess fabric, turn bag inside out, and double-stitch around bottom of net bag to eliminate fraying of exposed fabric and provide added strength.



5. Other volunteers are bending the wire and cutting the poles. They will assemble the nets when all parts are ready.



Thank you for your help. We really appreciate your assistance on these projects.

Please call if you have any questions.

_______________________________Coordinator

_______________________Office Phone

_______________________Home Phone

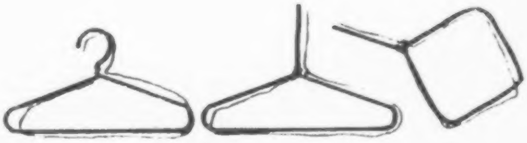
5/91

INSTRUCTIONS FOR PUTTING HANDLES ON SWEEPNETS

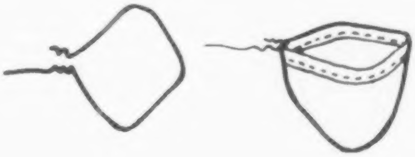
Someone has already sewn the cloth bags for the nets. To complete each net, you need:

1 heavy weight wire coat hanger
1 5/8" wooden dowel, cut to 28" length
1 roll duct tape

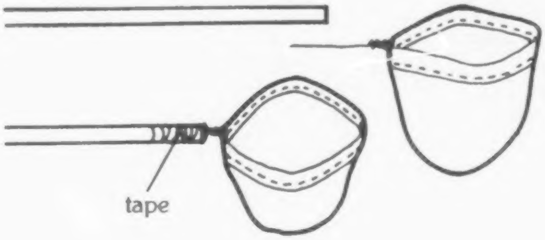
1. Take the wire coat hanger, straighten the hook and pull the hanger into a square. Pliers make this job easier. (If your coat hangers are of wire that bends quite readily, use a double set of coat hangers for each net. Put one hanger on top of the other while bending so that both are bent the same.)



2. Open the wire square (both squares, if you used two hangers) and thread the net bag on the wire (or wires).



3. Attach the hoop to the pole/dowel with the duct tape.



Thank you for your help. We really appreciate your assistance on the projects.

Please call if you have any questions.

________________________________Coordinator

________________________________Office Phone

________________________________Home Phone

5/91

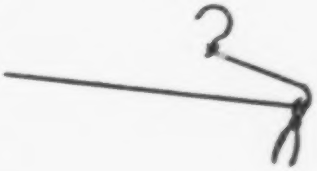
An alternative: You may want to get ready-made marker flags from a local contractor or surveyor.

INSTRUCTIONS FOR MAKING MARKER FLAGS

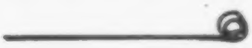
We will use these flags to mark the boundaries of an area where children are doing "Plant Hunt", "Mapping a Study Site", and other activities. Four brightly colored markers make it easy for the youngsters to see the corners of their area. Each group will have its own color.

To make the marker flags you need:
- several colors of brightly colored flagging tape
  or brightly colored fabric
- coat hangers made of heavy-weight wire
- scissors or pinking sheers
- wire cutters
- pliers

To make each flag, please do the following:



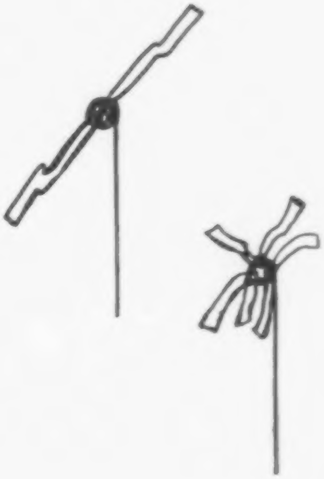
1. Straighten out coat hanger wire and cut off a 24" length of straight wire.



2. Bend one end of the wire into a double circle. Make the circle about 1" in diameter.

3. Cut 3 strips of 1" wide flagging so that each strip is 10-12" long.

4. Thread each strip through the wire circle and tie it using a square knot. The straight end of the wire will be stuck into the ground to hold the flag upright.



5. Please repeat this process to make a total of:

Number	Color	
		marker flags
		marker flags
		marker flags
		marker flags
		marker flags

Thank you for your help. We really appreciate your assistance on these projects.

Please call if you have any questions.

______________________________ Coordinator

______________________________ Office Phone

______________________________ Home Phone

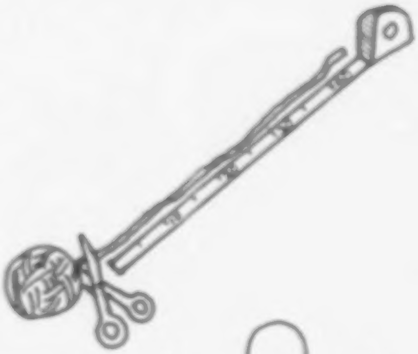
INSTRUCTIONS FOR PUTTING LENSES ON YARN NECKLACES

We have found that it's much easier for us to keep track of magnifying lenses if volunteers and children each wear their own lens around their necks on a yarn necklace. The labels that the youngsters put on their yarn necklaces also serve as our nametags.

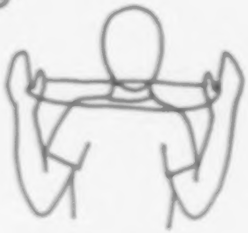
At the end of the year, we give each child his/her lens to take home so that he/she can continue exploring and discover more.

To make the lens-necklaces, you need:

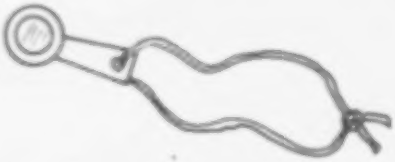
- yarn
- scissors
- lenses
- measuring tape or ruler



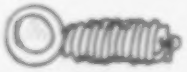
1. Cut a piece of yarn 40" long. BE SURE THAT YOU DO NOT STRETCH THE YARN. Your cut piece should measure 40" when lying flat on the table.



2. Use whatever system you wish to cut many more pieces that are 40" long. Please keep the yarn loose so that it is not stretched.



3. Thread the yarn through the hole in the handle of each lens and tie the ends together with a knot.



4. To keep the yarn from getting tangled, please wrap the yarn around the handle of the lens and put it back into the plastic sack which the lens comes in.

Thank you for your help. We really appreciate your assistance on these projects.

Please call if you have any questions.

__________________________________ Coordinator

__________________________ Office Phone

__________________________ Home Phone

5/91

Activities to Start With

There are five activities that seem to work virtually **everywhere**

Animals in a Grassland
Envirolopes and the Observation Game
Litter Critters
Plant Hunt/Leaf Rubbings
Super Soil

We suggest that you begin your program with these or at least 3 of these

NOTE: IF you decide NOT to use all five, be sure to include **at least one of the animal activities**—either "Animals in a Grassland" or "Litter Critters"—in your collection

To figure out whether they will all work in your area, go to two or three of the sites where you'll be conducting your pilot test with kids and scout the area using the "Site Inventory Checklist for Activities to Start With" printed on the next page. Remember that what you find this week might very well be different three or four weeks from now— especially if it's spring or fall and the weather is warming or cooling week by week. Local biology teachers or naturalists may be able to help you with your site-inventory and selection of activities

On pages M19-M31, we have included sheets outlining the materials needs for each of these activities. At the top of each page is a "recipe" listing the contents for each kit. We suggest you enlarge this on a copy machine and paste a copy of the outside of each kit. With this list anyone can easily check the contents of the kit to see if it is complete. Below the "recipes" are tips on where to obtain the materials and how to make them. We hope that this information will also help you avoid some of the pitfalls that we discovered and overcame by trial and error

SITE INVENTORY CHECKLIST - ACTIVITIES TO START WITH

OBIS Activity Title	Resources Needed to Do the Activity	Amount Needed for Each Group of Six	Other Requirements	Dates Checked	OK	No
Animals in a Grassland	An area of grass	30'x40'	Temperature at least 50°F. Use a sweepnet and ziplock bag to test the site. If you collect 4 or 5 different kinds of critters in 20-30 "sweeps," the area is fine.			
Envirolopes and the Observation Game	Anyplace!	20'x40'	Any weather. We have even done this with new snow on the ground and used a floor space indoors for the sorting and discussion sections and the game.			
Litter Critters	Areas with dead leaves on the ground (e.g., under bushes, against walls or fences) - ideally both dry and moist areas	At least five 2'x6' areas	Temperature at least 40°F. To check the site, slowly look through the leaves. If you find at least 3 or 4 different kinds of critters in each area in a few minutes of looking, it's fine. Be sure to pile the leaves back. (In Denver, we have found that if the weather has been especially dry and we "water" the leaf litter an hour or so ahead of time, lots more critters can be found.)			
Plant Hunt	An area with at least 10 different kinds of plants (e.g., grasses, clover, weeds, shrubs)	30'x30' or more	Any weather. If it's raining, snowing, or too cold outside, the sorting and discussion sections can be done on indoor floor space.			
Super Soil	An area where kids can dig up spoonfuls of soil with their trowels--ideally, both sandy soil and soil with organic matter/fertilizer	30'x30' or more	None			

Materials to be bagged for 1 volunteer and 6 children:

ANIMALS IN A GRASSLAND

6 gallon-size, ziplock bags*
3 sweepnets
3 Lawn Guides in one ziplock bag
1 data board with marking pen and
  2 sheets of paper

Refill list:	Put fresh paper on data board. As needed, clean and replace ziplock bags. Check contents for completeness and replace missing items.
Instructions:	For materials volunteers: Instructions for sewing sweepnets Instructions for attaching nets to poles Instructions for making data boards
Materials:	Purchased: Lawn Guides from Delta Education, Inc. or NAAEE Gallon-size ziplock bags (NOT freezer ziplock bags)* For sweepnets: thread, unbleached muslin, 5/8" wood dowels, duct tape For data boards: marker pens, butcher or poster paper, IDL or binder clips, duct tape, heavy cord Donated/scrounged: Sheer curtains for sweepnets (or buy from thrift shops) Heavy weight wire hangers for nets Heavy cardboard for data boards

Materials volunteers' tasks:

Make sweep nets: 1. sew, 2. attach to poles. (We have found that these two different tasks are best done by 2 different sets of volunteers--the seamstresses and the wood-workers.)
Set up data boards.
(See detailed instructions for making data boards and nets.)
Assemble the kits.

*NOTE: Freezer ziplock bags are made of heavier and more opaque plastic. For activities like this where students need to look at critters thru **clear** plastic, be sure to buy **regular** ziplock bags.

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Materials or 1 volunteer and 6 children:

ENVIROLOPES AND OBSERVATION GAME

Set of 10 envirolopes*
rubber banded together

(If every volunteer has a set in his/her activity folder, then this activity can be substituted for the planned activity at a moment's notice -- e.g. if the weather changes drastically.)

How to set up:	Rubber-band together a package of 10 envelopes each labeled with one envirolope challenge.
Instructions:.	For materials volunteers: Instructions for preparing envelopes
Materials:	Purchased: Legal-size (no. 10) envelopes and rubber bands

Materials volunteers' tasks:
Make envirolopes*. (See Instructions for preparing envelopes.)

Printing needs:
Make copies of Envirolope Challenges Card (from OBIS Envirolopes activity) and Instructions for preparing envelopes.

*NOTE: Before setting up this activity, review the list of Envirolope Challenges (in OBIS Envirolopes activity folder) and eliminate any that are inappropriate for your locale. (e.g. In Denver, we eliminate "Find at least 5 different kinds of shells" and "Find a shell that has five different colors on it".)

This is an especially good task for a former elementary school teacher who prints well or a p.c. owner who can print-out the challenges using large computer type.

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NOTE: This is an especially good task for a former elementary school teacher who prints well or a p.c. owner who can print-out the challenges using large computer type.

INSTRUCTIONS FOR PREPARING ENVELOPES FOR "ENVIROLOPES" ACTIVITY:

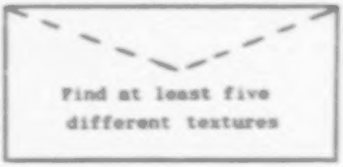
These envelopes are for an activity called "Envirolopes". It is a nature scavenger hunt. Each volunteer working with youngsters needs a set.

To make the envirolopes you need:

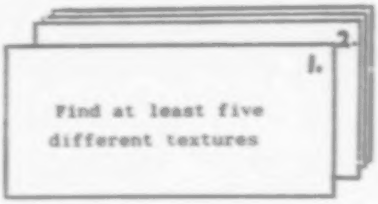
- 10 legal-size (no. 10) envelopes
- a typewriter or ball point pen (so the ink won't smear if it gets damp)
- rubber bands
- a sheet listing the "envirolope challenges"

Please make ________ sets of envirolopes by doing the following:

1. Type or clearly print (our children cannot read script handwriting yet) the first envirolope challenge on the front of an envelope.


Find at least five different textures

2. Continue to write one challenge on the front of each envelope until you have one envelope for each challenge on the list.
3. With the envelopes in the same order that the challenges appear on the sheet, number each envelope in the upper right hand corner. (These numbers make it easy to tell if the set is complete.)


2.
1.
Find at least five different textures

4. Place a rubber band around the completed set of envirolopes.
5. Repeat this process to make additional sets.

Thank you for your help. We really appreciate your assistance on these projects.

Please call if you have any questions.

________________________ Coordinator

________________________ Office Phone

________________________ Home Phone

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Materials to be boxed for 1 volunteer and 6 children:

LITTER CRITTERS

1 bag for each pair with:

- 1 observation tray
- 1 clear plastic cup
- 2 4"x 6" index cards
- 2 ziplock sandwich bags
- 1 pencil
- 3 Record Cards (on sub-16 lb. paper)
- 1 Litter Critter Wheel*

For the group:

- 1 Litter Shaker
- 1 box crayons

How to set up:	Boxes 18"x10"x12" are large enough to hold 3 grocery bags, Litter Shaker and crayons.
Refill list:	Resupply record cards. As needed, wipe out observation trays and sandwich bags. Check contents for completeness and replace missing items.
Instructions:	For materials volunteers: How to make Litter Critter Wheels
Materials:	Purchased: Clear squat, ultra-clear ("shatterproof" preferred) 9-oz. plastic cups, 4"x 6" unlined index cards, ziplock sandwich bags, pencils, crayons, duct tape (for making Shakers), brass fasteners (for making Wheels) Donated/scrounged: 1/2-gal. cardboard milk cartons, plastic berry boxes (from grocery stores), large brown paper grocery bags (3 per kit)

Materials volunteers' tasks:

Cut observation trays and staple pour-spouts shut.
Cut apart Record Cards.
Make Litter Critter Wheels (see Instructions).
Make Litter Shakers. See OBIS Litter Shaker Equipment Card. (We have found plastic berry boxes to be easier to use than hardware cloth for making the bottom end of the Shaker.)
Assemble the kits.*

*NOTE: In each bag, lay the Litter Critter Wheel flat against the side and then place the observation tray next to it. Keep the bag corners and sides straight. Fold down bag gently from the top. (This helps protect the Wheels which can get badly bent out of shape).

-over-

Printing needs:

NOTE: To avoid this printing task, buy pre-printed wheels from NAAEE.

Litter Critter Wheels--Large xerox/copy shops in most large cities can print **thorax** and **wing** wheels on **heavy-weight clear acetate**. This acetate is the material that is used to make "presentation quality" overhead transparencies using 4.0 or 5.0 mil. thick acetate in a Xerox copier or in a 3M Thermal Transparency Maker (most school districts have these). Thermal transparency sheets 5.0 mil. thick can be purchased at **large** office supply companies. NOTE: Thin transparency film copies from laser printers will **NOT** work. They are too flimsy.

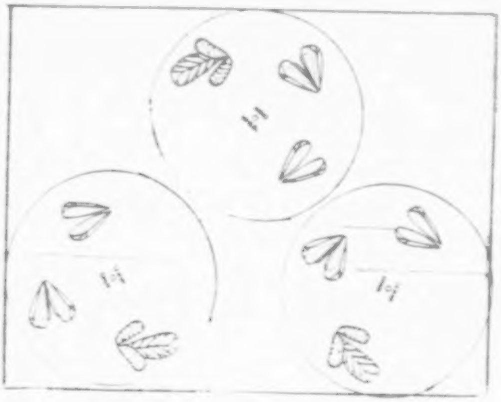
Head and **abdomen** wheels and Title Sheet should be printed on **cardstock**. (See illustration below.)

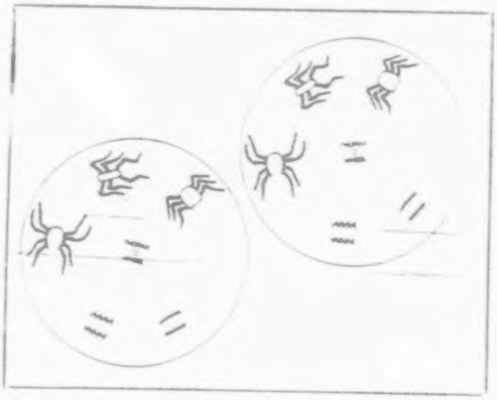
Print Record Cards on sub-16 lb. paper (60 gm/sq inch). This is light-weight paper and therefore easier to use (i.e. see through) for tracing.

Cut out all wheels inside the black lines.

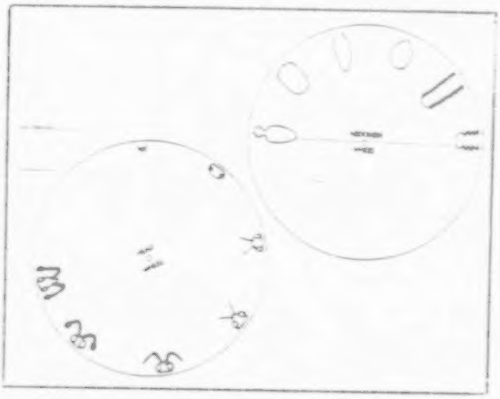
Illustration

At a large xerox/copy shop, copy the wing & thorax wheels on clear 8-1/2" x 11" heavy-weight acetate, using the masters in the OBIS activity folder.

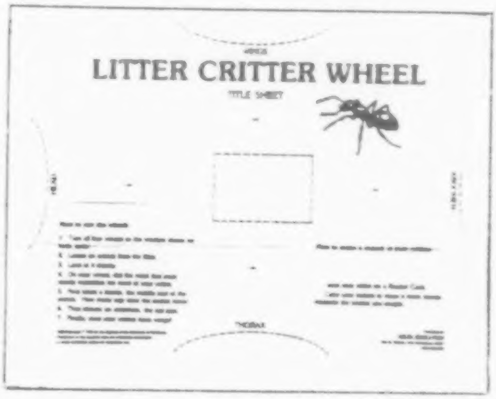




Copy the head and abdomen wheels on 8-1/2" x 11" white cardstock.



Copy the title sheet on 8-1/2" x 11" yellow or other color cardstock.



Materials to be boxed for 1 volunteer and 6 children:

PLANT HUNT/LEAF RUBBING

1 data board* with marking pen
and 4 sheets paper
1 Lawn Guide
4 marker flags*
3 gallon-size plastic bags
1 roll transparent tape

Optional: Conclude the activity by inviting each child to make a **leaf rubbing** of his/her favorite plant species.*

12 sheets of white paper
1 box or sack of crayons (at least 10-12)
1 How to make leaf rubbings instructions

Refill list:

Put fresh paper on data boards.
Check contents for completeness and replace missing items.

If making leaf rubbings:
Resupply white paper.

Instructions:

To go into volunteer-training activity folder:
How to make leaf rubbings

To go into the kit:
How to make leaf rubbings

For materials volunteers:
Instructions for making marker flags*
Instructions for making data boards

Materials:

Purchased:

Survey tape/flagging-from a large hardware store (150 ft. cost about $2 in 1989) or strips of brightly colored fabric or neon-colored jumbo yarn*
Lawn Guides from Delta Education, Inc. or NAAEE
Transparent tape and gallon-size plastic bags, (Note: these do **not** have to be zip-loc bags.)
For data boards: marker pens, butcher or poster paper, IDL or binder clips, duct tape, heavy cord

----

If making leaf rubbings:
Crayons (unless you can find used/scrounged crayons)
White paper (inexpensive, lighweight 8-1/2 x 11 paper or copy paper works better than heavy bond paper)

-over-

Materials Donated:

Heavy wire coat hangers for flags*
Heavy cardboard for data boards

If making leaf rubbings:
Crayons (Old, broken ones in a variety of colors are fine, since the kids need to use the side of the crayon, not the pointed tip.)

Materials volunteers' tasks:

Make marker flags.*
Set up data boards with enough paper.*
Assemble the kits.*

Printing needs: Make copies of How to make leaf rubbings.

*NOTES: As noted in the instructions for making marker flags an alternative is to get ready-made marker flags from a local contractor or surveyor. All four marker flags in a box should be alike. In order to separate one group of youngsters from those in a neighboring territory, it is important for the neighboring group to have flags of a different color or design.

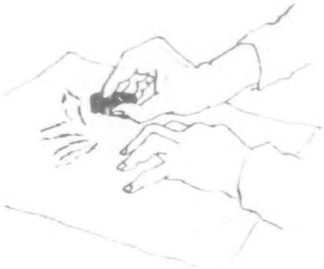
We invite each child to make a leaf rubbing of his/her favorite leaf at the end of the activity. The children can take their rubbings home, use them to make a bulletin board, or put them to any other creative use they choose (e.g. make greeting cards). Larger leaves with distinct veins and raised surfaces make better rubbings than small, tender leaves. You may chose to have your youngsters make sunprints instead of leaf rubbings. In making that decision, consider (1) the preparation/materials requirements, and (2) the size and texture of leaves at your study site. (Instructions for that alternative are included later in this book.)

In damp climates (e.g. Seattle and Ft. Lauderdale), two alternatives to data boards have been used for this activity. (1) Two 24" x 36" sheets of manilla tagboard or oaktag marked with grids are laminated and provided with each kit, or (2) two 23" x 36" Chux pads (that hospital delivery rooms throw away by the scores each day because they have been removed from sterile packs and not used) are marked with a grid, folded and placed in each kit. If you use one of these more waterproof alternatives, be sure to package two grids in each kit, so a group of 6 kids will have a total of 40 or 50 squares to use in sorting their leaves.

HOW TO MAKE LEAF RUBBINGS

Making a leaf rubbing is a very simple matter. You have probably done it before and need no directions. Briefly, to get the best results, most crafts books recommend the following:

1. Place the leaf on a smooth, hard surface. If your group of youngsters circles around the data board, each can use a side or corner of the board to work on.
2. Turn the leaf so that the **underside** is **up**. The underside generally has more exposed, raised ribs and veins, so will produce a more interesting rubbing.
3. Cover the leaf with a piece of paper.
4. With your fingers, feel where the leaf is and hold it down at the bottom with one hand.
5. Hold the crayon with the other hand, and using the **side** (not the point) of the crayon, rub the crayon firmly across the paper where it covers the leaf. Use short strokes. Press hard enough so the veins and edges show up darker than the rest of the leaf.



6. To complete the rubbing, shift your fingers around and hold down the section of the leaf already colored (be careful not to move the paper or the leaf as you shift your fingers). Rub the crayon over the rest of the leaf.

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Materials to be boxed for 1 volunteer and 6 children:

SUPER SOIL

1 gallon plastic jug* (1 cup)
1 bag of potting soil (1 cup)
3 trowels
12 paper towels**
13 vials (with a line 1/4 way up from bottom)
1 container of alum
1 bag of organic material
(about 3 cups peat moss, compost or manure)

***Fill with water at site.**

- - - - - - - - - - - - - -

Optional: When concluding with Branching Out #2 (See end of OBIS Super Soil activity.)

8 3-oz. paper cups
10 bean seeds

Note: extras are in case of accidents.

Refill list:

Resupply potting soil, paper towels, alum and organic material.
As needed, clean vials and trowels.
Check contents for completeness and replace missing items.
------------
If doing Branching Out #2:
Resupply paper cups and bean seeds.

Materials:

Purchased:
Vials (clear plastic, 13 dram, approx. 1 1/4" diam. & 3" tall), trowels, and alum from Delta Education, Inc. (or possibly from your local pharmacy)
Potting soil, organic material, sturdy paper towels**, waterproof marking pen (to mark vials), gallon-size freezer ziplock bags (for holding potting soil & organic material) from your local stores.
------------
If doing Branching Out #2:
3-oz. paper cups and bean seeds

Donated/Scrounged:
1-gallon plastic jugs with caps (for carrying water)
Compost or manure can be used instead of purchasing peat moss as listed above.
Film cannisters (We like the clear plastic ones.) - for alum and bean seeds

Materials volunteers' tasks:

Use waterproof pen to mark vials as described in OBIS Super Soil activity.
Fill freezer ziplock bags with soil and with organic material.
Fill film cans with alum.
Assemble the kits.

TIME AND MONEY SAVING TIPS: It may be possible for volunteers to get their **paper towels from the site's restroom or classroom before beginning the activity, when they are filling their water jugs.

More Activities to Choose From

This section contains three resources to help you select activities appropriate for your area and prepare kits of materials for those activities.

1. **A list of OBIS Activities that Meet Our Criteria and Achieve Our Objectives**, pages M35-36—The activities listed engage kids and volunteers in outdoor investigations that directly involve them with (a) the plants and/or animals occurring in the neighborhood or (b) the habitat in which those organisms live. These activities also deliver on our objectives. (See pages 19-20.)

   You will note that the five activities described on the preceding pages, because they seem to work virtually everywhere, have been highlighted with an asterisk. You'll find it easiest to start with these.

   To expand the repertoire used by your project, we suggest that you review the titles and descriptions of investigations distributed by NAAEE using the VINE Program Order Form. Note ones that you would like to use because they fit with your interests and on-going themes.

   For example, if you wish to emphasize the diversity of organisms living in your neighborhood, you might want to combine *Web It* and *Neighborhood Birds* with *Plant Hunt* and *Animals in a Grassland*. Habitats and micro-climates could be explored using *Mapping a Study Site*, *Terrestrial* or *Sensory Hi-Lo Hunt*, and *Plant Patterns*. Some plant, animal and soil interactions could be investigated using *Litter Critters*, *Super Soil*, *Roots & Shoots*, and *Hold a Hill*.

   There are numerous options. But keep in mind the fact that the resources existing at the sites where your program occurs will also influence the activities you select and the times of year you can use them. To address this, you'll need to assess your sites using the checklist described below.

2. **A Site Inventory Checklist,** pages M37 &39—This will guide you in scouting out the sites where your volunteers work with kids. Once you find the natural resources listed in the left-hand columns, you'll be able to easily identify activities that can be used at your sites.

   We suggest that you check your sites once or twice a month, throughout the year, so that you can decide which activities are best used in the fall, winter, spring, etc. Please note that there are OBIS activities that meet our criteria and are on list #1 above, but are not included in this inventory checklist (either because they require special conditions and resources or because we have not yet had enough experience with them to clearly define their requirements).

3. **Sheets Outlining Materials Needed** for many activities are assembled **in alphabetical order** starting on page M41. Although there is not a sheet for every activity, we have included sheets for the most-used activities. We hope these will make it easier for you and your volunteers to construct additional kits.

OBIS Activities that Meet Our Criteria and Achieve Our Objectives

Activity Title

A Better Fly Trap
Animal Diversity
Animals in Grassland *
Ants
Creepers & Climbers
Envirolopes & the Observation Game *
Flower Powder
Fly A Leaf
Hold a Hill
Hopper Circus
Hopper Herding
Isopods
Junk-In-The-Box
Lichen Looking
Litter Critters *
Mapping a Study Site
Moisture Makers
Mystery Marauders
Out Of Control
Pigment Puzzles
Plant Hunt *
Plant Patterns
Plants Around a Bldg
Roots & Shoots
Scram or Freeze
Sensory Hi-Lo Hunt
Shake It!
Snug As A Bug
Super Soil *
Swell Homes
Terrestrial Hi-Lo Hunt
Web It

Forest/Woods

Leaf Living
Logs to Soil
Sawing Away
Tree Tally

* These Activities are good ones to start with and can be used virtually anywhere

NOTE: A current price list and order form for buying individual activities may be requested from NAAEE at 513-676-2514

-over-

Desert Plants and Lizards

- Cactus Wheel
- Cool It
- Desert Hunt
- Desert Water Keepers
- Leapin' Lizards

Aquatic

- Animal Movement in Water
- Attract a Fish (need a minnow pond)
- Beach Combing
- Crawdad Grab
- Damsels & Dragons
- Habitats of a Pond
- Hold It
- How Many Organisms?
- Too Many Mosquitoes
- Water Breathers
- Water Snails
- Water Striders
- What Lives Here?

Winter

- Animal Anti-Freeze
- Birdfeeder
- For The Birds
- Wintergreen
- Neighborhood Birds *

Nighttime

- Night Eyes
- Night Shine
- The Old White Sheet Trick
- Who Goes There?

Simulations & Craft Activities — for days with very bad weather

- Acorns (for areas with red & grey squirrels)
- Bean Bugs
- Bird Nests
- Food Chain Game
- Environmental Sunprints
- Invent a Plant
- Invent an Animal
- Population Game
- Seed Dispersal
- Silent Stalking
- Sound Off!
- Sticklers

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SITE INVENTORY CHECKLIST - Page 1

Resources Needed	Amount Needed For Each Group of 6	Other Requirements	OBIS Activity Title	Are critters/plants found in quantities needed? Note yes or no for each mo. as you check sites.											
				Ja	F	M	A	M	Jn	Jl	A	S	O	N	D
Any location with a variety of exposures (sunny, shady, etc.)	20'x20' or more	Needs to be colder than 45° outside.	Animal Antifreeze (also see Wintergreen if you have long lasting snow on the ground)												
Mown lawn and a more natural field or vacant lot	50'x50'	At least 50°F *materials	Animal Diversity												
Area of grass: mown lawn or field/meadow (See Animals in Grassland activity)	30'x40' Use a sweepnet to test the site. If you collect 4 or 5 different kinds of critters in 20-30 sweeps, it's fine.	At least 50°F *materials	Animals in a Grassland												
Active ant mounds (lure out ants with soda pop or other food)	4-5 active mounds	Warm day	Ants												
Any 2 or more kinds of seed-eating birds and places to set up feeders that are convenient to use (See Birdfeeder activity)	Each group can share the construction and maintenance of 1 feeder or kids can each install a feeder at home.	Vandalism/security may be a problem. Best to do in winter.	Birdfeeder (also see For the Birds)												
Anyplace!	20'x40'	If inclement weather, need floorspace indoors for sorting, discussing and playing Observation Game.	Envirolopes and the Observation Game												
At least 3 different kinds of flowers with abundant pollen, (e.g., dandelions, mustards, bulbs, flowering shrubs)	At least 10 of each kind of flower.	*materials	Flower Powder												
At least 5 different kinds of trees or shrubs with leaves reachable by kids	15 leaves of various kinds	Wind is essential.	Fly a Leaf												
A sloped area in which shallow (1") troughs 2" x 1 yd. can be scratched in the dirt	3 troughs	---	Hold a Hill												
An area with grasshoppers, crickets, and other hopping insects	50'x50' with at least 10 hoppers	---	Hopper Circus and/or Hopper Herding												
An area with both pillbugs and sowbugs (See Isopod activity)	At least 10 pillbugs and 10 sowbugs	---	Isopods												
Areas with dead leaves on the ground (e.g., under bushes, against walls or fences), ideally both dry and moist areas	At least 5 2'x6' areas with 3-4 different kinds of critters in each	At least 40°F *materials	Litter Critters												
An area with a variety of features to map (e.g., sidewalks, bush, tree, grass, clover)	20'x60' or 40'x40' area that can be broken up into adjacent areas (20'x20' for each pair)	---	Mapping a Study Site												

*Materials: This indicates that substantial materials are needed to do this activity.
Be sure to check the materials requirements and begin their preparation well in advance.

M37

see next page

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SITE INVENTORY CHECKLIST - Page 2

Resources Needed	Amount Needed For Each Group of 6	Other Requirements	OBIS Activity Title	Are critters/plants found in quantities needed? Note yes or no for each mo. as you check sites.											
				Ja	F	M	A	M	Jn	Jl	A	S	O	N	D
Shrubs or trees (with branches within kids' reach) that are NOT sprayed and have holes nibbled in them	At least 3-4 nibbled/ unsprayed shrubs/trees with critters on them that can be shaken off (See Mystery Marauders)	---	Mystery Marauders												
An area with at least 10 different kinds of plants (e.g., grasses, clover, weeds, shrubs)	At least 30'x30'	---	Plant Hunt												
An area with at least 8 different kinds of plants distributed in patterns influenced by man (e.g., planting and foot traffic) and by environmental factors (e.g., shade, moisture)	20'x60' or 40'x40' area that can be broken up into 3 adjacent areas (each 20'x20')	---	Plant Patterns												
A vacant lot or weedy area where kids can dig up weeds with their trowels	An area 25'x25' or larger with 5 different kinds of weeds (at least 20 weeds to dig up)	---	Roots and Shoots												
At least 3 different kinds of shrubs that have good mystery communities (See Shake It activity)	At least 3 shrubs of each different kind	At least 40°F Do before autumn pruning	Shake It												
Shrubs or trees (with branches within kids' reach) that have galls, leaves rolled up and other animals' "homes," webs, eggs, etc.	At least 5 or 6 "inhabited" trees/shrubs	Adequate resources won't be available in areas of heavy pesticide use.	Snug as a Bug and/or Swell Homes												
An area where kids can dig up spoonfuls of soil with their trowels--ideally, both sandy soil and soil with organic matter/ fertilizer	30'x30' or more	---	Super Soil												
An area where kids can find a variety of temperatures, light, wind, moisture	At least 30'x30'	Breezy day is ideal. *materials	Terrestrial Hi-Lo Hunt												
3 or more different kinds of spider webs in bushes, corners of bldgs.,under window ledges, etc.	At least 12 webs, including 3 or 4 with active spiders	At least 50°F	Web It												
A pond or stream with gently sloping bank	About 20' of bank. Test the water by using a dip net as described in Action #3 and rinse out net in a clear plastic cup with water. If you see many tiny critters when you hold the cup up to light, it's fine.	Works well into late autumn.	What Lives Here? (Also see other aquatic activities listed)												

*Materials: This indicates that substantial materials are needed to do this activity. Be sure to check the materials requirements and begin their preparation well in advance.

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Materials to be boxed for 1 volunteer and 6 children:

NOTE: You may choose to have each pair of students build one fly trap. If you do, only 1/2 as much of everything is needed.

A BETTER FLY TRAP

1 1 or 2 qt. jug with lid*
6 1/2-gal.milk cartons or jugs
1 plastic spoon (for handling bait)
7 pieces fly bait (all the same kind, in ziplock)

*Fill with water prior to activity.

1 set trap-making materials:
  8 straws, 8 paper plates, 6 plastic sandwich bags, 4 pieces aluminum foil, 8 popsicle sticks, gluestick, 8 pieces string, 1 roll transparent tape, 8 pieces cheesecloth, 8 cone-shaped cups, 6 pieces nylon window screen

1 set construction tools:
  3 scissors, 1 stapler, 3 paring knives

Refill list: Resupply fly bait in ziplock bag, milk cartons or jugs, and, as needed, trap-making materials.
Check contents for completeness and replace missing items.

Instructions: See "Preparation" section of OBIS A Better Fly Trap activity card for bait recommendations.

Materials: Purchased:
straws, paper plates, plastic sandwich bags, aluminum foil, string, gluestick, transparent tape, cone-shaped cups, cheesecloth (fabric store), popsicle sticks (craft shop), nylon window screen (hardware store), scissors, stapler, paring knives, ziplock sandwich bags (for bait)

Donated:
fly bait (Ask your butcher or meat/poultry/fish wholesaler in the yellow pages for outdated meat, guts or other fly-attracting parts that they discard.) All bait for the group should be the **same**, so that only the designs of the flytraps vary.
1/2-gal. milk cartons or jugs (Cardboard cartons or plastic will work, but all kids should use the **same** kind, so that only the design features vary and can be compared.)

Materials volunteers' tasks:
Cut aluminum foil and cheesecloth (approximately 8" to 12" squares).
Cut nylon window screen (about 4" x 6" squares).
Cut string into 2' lengths.
Cut fly bait into sugar-cube sized portions and place in firmly closed ziplock bag.

Materials to be boxed for 1 volunteer and 6 children:

ANIMAL ANTI-FREEZE

- 31 **film cans***
  - 8 - control "animals"
  - 18 - enough for each child to do 3 trials
  - 3 - one can per pair for freeze-off
- 31 **construction paper squares** (to cover cans)
- 1 **large plastic bag** (to dispose of used cans)
- 1 **trowel**
- 1 **tray**
- 1 **small box**

For mixing gelatin* before activity:

- 1 **Directions for mixing gelatin**
- 1 **thermos**
- 1 **thermometer**
- 6 **packets gelatin & 4 paper towels** (in ziplock sandwich bags)
- 1 **measuring cup**
- 1 **stirring stick**

Refill list:	Resupply 31 marked film cans (without lids), large plastic bag, ziplock sandwich bags with 6 packets of gelatin and paper towels, and, if needed, construction paper squares. Clean out thermos and leave open to air dry. Check themometers to make sure mercury column is not broken (i.e. has no blank spaces). These thermometers need to be fixed before they are used again. Check contents for completeness and replace missing items.
Instructions:	To go into volunteer-training activity folder: Directions for mixing gelatin To go into kit: Directions for mixing gelatin For materials volunteers: Instructions for preparing film cans
Materials:	Purchased: 1/2-gal. plastic thermos with pour spout (about $5 in Denver, 1987) Garden trowels (from Delta Education, Inc.)

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Unflavored gelatin, large plastic bags (to hold the 31 used cans and other trash), ziplock sandwich bags, paper towels, clear plastic measuring cups (with divisions showing 1/4 cups), construction paper, 1" wide masking tape

0° - 230° F and/or -20° to +110° C thermometers (liquid measurement) 12" length.(from a lab equipment outlet - see "Laboratory Equipment & Supplies" in local yellow pages)

Donated/Scrounged:

Empty 35mm film cans **without** lids (from photo labs or stores) - NOTE: **All** films cans must be the **same** (e.g. all black Kodak cans).

Cardboard "tray" or flat box (approx. 6" x 10") that will hold 8 film cans steady so that they can be filled with gelatin

Wooden paint stirrers (from hardware or paint store)

Small boxes that can be set over film can that will be the "semi-protected" trial control

Materials volunteers' tasks:

Mark film cans. (See Instructions for preparing film cans.)

Cut construction paper into squares approx. 1-3/4" square, (i.e. large enough to cover film can). These should all be the **same color.**

Put 6 gelatin packets and 4 paper towels into ziplock bag (protects gelatin from moisture).

Cut cardboard "trays" (approx. 6" x 10" - i.e. large enough to hold 8 film cans).

Assemble the kits.

Printing needs: Make copies of Directions for mixing gelatin and Instructions for preparing film cans.

*NOTES: Unflavored gelatin is much easier to clean up.

This activity takes lots of film cans. Discard them after use. All film cans in a box **must** be the same size and color.

Test this activity ahead of time to see how gelatin mixes, sets up, etc. In extremely cold weather, the gelatin may set up in the thermos before you even get outside.

Remember to prewarm the inside of the thermos if it is cold and keep the thermos as warm as possible once outside.

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INSTRUCTIONS FOR PREPARING FILM CANS FOR ANIMAL ANTIFREEZE:

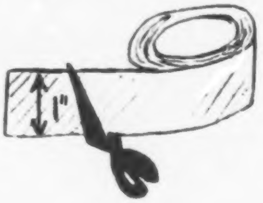
These film cans will be used in our "Animal Anti-Freeze" activity. The cans will be filled halfway with liquid gelatin, and youngsters will hide their gelatin "animals". The cans will be checked and times recorded to see how long it takes the gelatin to set. The different setting times will help the children understand that some places are more protected and animals would stay warmer in those places.

We need to mark the cans at the halfway point so that we will know when we have filled them exactly half full with liquid gelatin. To do that, you will need:

film cans
1"-wide masking tape
scissors

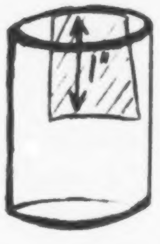
Please prepare each film can as follows:

1. Remove and throw away the film can lid.



2. Cut off a piece of masking tape.

3. Line up the top edge of the tape with the top edge of the inside of the can and press the tape down firmly. The bottom edge of the tape marks the "half full" level, since the cans are 2" high.



4. Repeat #1-3 with additional cans.

Thank you for your help. We really appreciate your assistance on these projects.

Please call if you have any questions.

______________________________Coordinator

____________________Office Phone

____________________Home Phone

5/91

DIRECTIONS FOR MIXING GELATIN FOR ANIMAL ANTI-FREEZE

PLEASE NOTE: BE SURE TO ARRIVE AT YOUR SITE AT LEAST 1/2 HOUR EARLY SO THAT YOU HAVE ENOUGH TIME TO PREPARE YOUR GELATIN.
If you do not **know** that there is HOT tap water at your site, take a thermos of **BOILING** water with you.
Be sure to wear a watch.

Measure the outdoor temperature in the shade with the thermometer. Remember that the temperature you measure now may be 5° -15° colder or warmer than it will be 30-50 minutes from now when the youngsters are doing the activity. PLAN ACCORDINGLY.

Estimate what the temperature will be at activity-time and select A., B., or C. according to your estimate. These 3 recipes are formulated so that the control gelatin "animal" will set in 5-10 minutes.

A. **under 20° F**, use:	B. **20°-35° F**, use:	C. **35°-45° F**, use:
1 cup hot water	1 cup hot water	1 3/4 cups hot water
2 packets gelatin	3 packets gelatin	4 packets gelatin
3 cups cold water	3 cups cold water	3 cups cold water
Follow mixing directions below.	Follow mixing directions below.	Follow mixing directions below.
Final mixture will be 70°-80°.	Final mixture will be 70°-80°.	Final mixture will be 80°-90°.

MIXING DIRECTIONS

1. Get out of your activity box:
   thermos
   thermometer
   stirring stick
   gelatin packets
   measuring cup
   paper towels

2. Warm the thermos with hot water.

3. Make sure tap water is 110°-115°F, measure specified amount into thermos. (See recipe above.)

4. Add gelatin, stir well with wooden stick (about 1 minute).

5. Add very cold tap water, stir well. DO NOT SHAKE the thermos. (It will cause the gelatin to become foamy and it will not pour.)

6. Pour one test gelatin "animal", place in the open (but not in the sun) and check the setting time. Within the activity period there will be variations in time depending on how the outdoor temperature changes, the gelatin cools, and how quickly the kids hide their animals. The crucial factor is that it sets within the 10 minutes so you have time to run several tests.

HINTS: If the gelatin is not setting in 5-10 minutes, remove the thermos lid and let the gelatin cool a bit. Be careful not to cool the 3 or 4 packet mixture too much. It will set in the thermos.

If all else fails, measure the outdoor temperature in the shade again, and carefully re-mix your gelatin.

5/91

Materials to be bagged for 1 volunteer and 6 children:

ANIMAL DIVERSITY

3 Lawn Guides
3 "lawn" ziplock bags
3 "vacant lot" ziplock bags
3 sweepnets
1 data board with marking pen

How to set up: Put Lawn Guides and bags in a gallon-size zip-loc bag.

Refill lists: Put fresh paper on data boards.
Check contents for completeness and replace missing items.

Instructions: For materials volunteers:
  Instructions for sewing insect nets
  Instructions for attaching nets to poles
  Instructions for making data boards

Materials: Purchased:
  Lawn Guides from Delta Education, Inc. or NAAEE
  Gallon-size ziplock bags (NOT freezer ziplock bags)*
  Masking tape to label bags
  For sweep nets: thread, unbleached muslin, 5/8" wood dowels, duct tape
  For data boards: marker pens, butcher or poster paper, IDL or binder clips, duct tape, heavy cord

Donated:
  Sheer curtains for sweepnets (or buy from thrift shops)
  Heavy-weight wire hangers for nets
  Heavy cardboard for data boards

Materials volunteers' tasks:
  Make sweep nets: 1. sew, 2. attach to poles. (We have found that these two different tasks are best done by 2 different sets of volunteers--the seamstresses and the wood-workers.)
  Label bags: put 6" masking tape on bag - print **lawn** or **vacant lot** with indelible marker pen.
  Set up data boards.
  (See detailed instructions for making data boards and nets.)
  Assemble the kits.

*NOTE: Freezer ziplock bags are made of heavier and more opaque plastic. For activities like this where students need to look at critters thru **clear** plastic, be sure to buy **regular** ziplock bags.

5/91

Materials to be boxed for 1 volunteer and 6 children:

ANIMAL MOVEMENT IN WATER

For each pair:

- 1 dip net
- 2 observation trays
- 1 plastic spoon
- 1 clear plastic cup*
- 1 Pond Guide

For the group to share:

- 1 turkey baster

Refill list: Check contents for completeness and replace missing items.

Materials:

Purchased:
Dip nets and Pond Guides from Delta Educ or NAAEE
Turkey baster, plastic spoons, and 9-oz. clear, soft-plastic cups*

Donated/scrounged:
1/2-gal. milk cartons for observation trays

Materials volunteers' tasks:
Prepare observation trays. Staple shut tops of cartons. Assemble the kits.

*NOTE: Some plastic cups are much better than others for observing critters. We highly recommend the squat 9-oz. cups made of "ultra-clear shatterproof" plastic. Also, the ones made of soft shatterproof plastic cannot be cracked.

5/91

Materials to be boxed for 1 volunteer and 6 children:

ANTS

30 cotton swabs
1 1 or 2 quart jug*
12 3-oz. paper cups
12 popsicle sticks
2 medicine droppers
2 small sticks
3 pieces cardboard
2 straws
1 gal.-size plastic bag
(to dispose of used swabs and paper towels)
3 paper towels**
1 set of 8 action cards

*Fill with water at site.

**At end of activity use water & towels to clean items before returning them to kit.

Assorted ant food containers with:
peanut butter
sugar
cereal
flour
crackers/bread
jam/jelly

Refill list:
Resupply cotton swabs, sticks, straws, plastic bag, paper towels and ant food containers.
Remove plastic bag with garbage.
Check other items in kit for completeness, and replace and clean as necessary.

Materials:
Purchased:
cotton swabs, 3-oz. paper cups, paper towels, popsicle sticks, straws, gallon-size plastic bags, medicine droppers (drugstore), peanut butter, jelly, sugar, flour, cereal, crackers

Donated:
1/2-gallon plastic jugs, small sticks (twigs, etc.), cardboard (e.g. from backs of writing tablets), containers for ant food. (We think clear plastic 35 mm film cans are best.)

Materials volunteeers' tasks:
Fill ant food containers.
Count out and band together cotton swabs and popsicle sticks.
Cut and rubber-band sets of action cards.
Assemble the kits.

Printing Needs:
Make copies of Action Cards on colored card stock. (See OBIS Ants activity folder.)

5/91

Materials to be bagged for 1 volunteer and 6 children:

BEAN BUGS

1 data board and marker
with 2 sheets paper
1 bag of bean bugs (counted out-see instructions)
1 26 meter-long string
4 large nails
1 meter stick

For each of 3 pairs:

1 10cm x 10cm wire square*
1 3" x 5" card
1 pencil

*If each pair of students tosses their wire square and counts 10 times (instead of the recommended 6-8 times) the math work is easier.

Refill list:

Resupply bag of counted bean bugs and 3"x 5" cards. Put fresh paper on data board
Check contents for completeness and replace missing items.

Instructions:

For materials volunteers:
For preparation of wire squares and bean bugs, see OBIS Bean Bugs activity card

Materials:

Purchased:
- Bean bugs (see OBIS Bean Bugs activity card for recommendations on type of beans), string, large nails (e.g. 10-penny), unlined 3"x 5" cards, pencils, meter sticks, duct or masking tape (for making wire squares)
- For data boards: marker pens, butcher or poster paper, IDL or binder clips, duct tape, heavy cord

Donated:
- Lightweight wire coathangers (The white ones, made of thinner wire, are best for making wire squares.)
- Heavy cardboard for data boards

Materials volunteers' tasks:

Prepare wire squares (see instructions).
Count bean bugs (see instructions). NOTE: Use **at least 2,000** beans for each group.
Set up data boards.
(See instructions for making data boards).
Cut string in 26 meter lengths. Use a marker pen to place marks 5 meters from the end, 8 meters from the 1st mark, and 5 meters from the 2nd mark.
Roll up the string so that it doesn't get tangled.
Assemble the kits.

5/91

Materials to be boxed for 1 volunteer and 6 children:

DESERT WATER KEEPERS

1 gal. plastic jug*

*Fill with water at site.

6 blotter-paper leaves (2 narrow, 2 medium, 2 wide blades)
6 plastic coffee stirrers
3 crayons or paraffin blocks
1 stapler with staples
3 copies of Instructions for making & filling the leaf holders
6 marked transparent plastic drinking straws (must be big enough that coffee stirrers can fit inside)
1 roll transparent tape
1 can Play-Doh
3 glass medicine droppers with narrow, pointed tip
1 jar water (about 1/2 cup) colored green with food coloring
3 Kleenex tissues (to sop up overflow as leaves are placed in leaf-holders)
1 disposable aluminum 8" cake pan
1 data board with pen & paper
6 pieces flagging (about 12" long)
6 plastic bags (about 8" x 8") -NOT ziplock bags
6 pieces string (about 12" long)
1 plastic bag for trash

Refill list: Resupply blotter-paper leaves (2 narrow, 2 medium, 2 wide blades), coffee stirrers, marked transparent straws, Kleenex tissues, plastic bag for trash. Put fresh paper on data board.

Check contents for completeness and replace missing items.

Materials: Purchased:

- Transparent plastic drinking straws (Sweetheart "Jumbo" are 1/4" diameter) & plastic coffee stirrers, the double-straw type (Jetware "Heavy duty sipper/stirrer" are 3/16" diameter), can most easily be purchased, in Denver, at a restaurant supply store (see your phonebook yellow pages). 1990 prices were $.86 per 250 and $1.40 per 1,000 respectively. The stirrers MUST easily fit inside the transparent straws.
- Medicine droppers (must have tips of 1/8" diam. or less) from Delta Education, Inc. (or possibly your local pharmacy)
- Play-Doh (or clay) from crafts or toy store
- Survey flagging from a large hardware store (or use strips of bright fabric)

-over-

Purchased cont'd.:

Blotter paper, staplers & staples from office supply store

Paraffin (as sold for canning fruit), transparent tape, cake pans, plastic bags, string, etc. from local stores

For data boards: marker pens, butcher or poster paper, IDL or binder clips, duct tape, heavy cord

Donated/scrounged:

Old crayons, jars with tight lids (1/2 to 1C. capacity)

1-gallon plastic jugs with lids (for carrying water)

Heavy cardboard for data board

Materials volunteers' tasks:

** Be sure to construct one set of prototype materials & make sure that the prototype and your crayon/paraffin coating work as described in the OBIS Desert Water Keepers activity card before making numerous sets. Accuracy & fit are critical for the leaf & leaf-holder models to work.

Cut out leaves -- be sure to stay within outlines while cutting.

Mark transparent straws using a waterproof pen with a line every 1/2 cm. starting at one end of straw and marking down 10 cm.

Color & bottle green water.

Set up data boards.
(See instruction for making data boards.)

Cut flagging & string.

Assemble the kits.

Printing Needs:

Make copies of Instructions for making & filling the leaf holders (from OBIS Desert Water Keepers activity card).

5/91

Materials to be boxed for 1 volunteer and 6 children:

FLOWER POWDER

- 4 pollen boards
- 10 pieces flagging
- 3 sets of flower shapes
  (a set=1 cup, 1 flat circle, 1 cone)
- 1 box flower-making materials (including: 6 cotton balls, 15 cotton swabs, 15 pipe cleaner pieces, 25 toothpicks, 3 containers of glue, 1 stick clay in pieces, 2 scissors, 3 squares construction paper, 1 roll transparent tape)
- 3 popsicle sticks
- 3 containers with "pollen"
  - 1-white cornstarch
  - 1-orange tempera paint powder*
  - 1-blue tempera paint powder*
- 6 "bees"
- 3 ziplock sandwich bags

Refill list:	Resupply flower shapes & flower-making materials. Clean/brush off pollen boards and "bees". Check contents for completeness and replace missing items.
Materials:	Purchased: Everything except "donated" items listed below. Donated/scrounged: Cardboard for pollen boards (We use the backs from pads of writing paper.) 35 mm film cans for pollen (Clear ones are best.)

Materials volunteeers' tasks:

Make Pollen Boards and "bees". (See directions on OBIS Flower Powder Equipment Card.)
Cut circles and make cones. (See directions in OBIS card.)
Cut flagging.
Cut pipe cleaners-varying small lengths (1" to 5").
Separate clay into pieces and put into plastic bags.
Fill the pollen containers.
Assemble the kits.

*NOTE: In Seattle, Courtenay Jackson found that it was easier to get powdered dry mustard and cinnamon in bulk quantities at a health food store and use that for "pollen" rather than track down tempera paint powder.

5/91

Materials to be bagged for 1 volunteer and 6 children:

FLY A LEAF

- 6 dowels, 1/3" to 1/2" diameter (sharpened at one end)
- 1 plastic drinking straw
- 1 roll (10-12 lb. test monofilament nylon) fishing line
- 1 roll tape
- 1 scissors
- 1 mallet (for driving dowels into ground)
- 1 spool thread or light string/yarn

** AT THE END OF THE ACTIVITY, CAREFULLY WRAP THE FISHING LINE AROUND THE DOWELS (WITHOUT SQUASHING THE STRAW) & TAPE DOWN THE LINE (so it won't get tangled).

Refill list:

Resupply straw.
Check contents for completeness and replace missing items.

Materials:

Purchased:
Dowels (1/3" to 1/2" diam.), 10-12 lb. test monofilament nylon fishing line, rubber mallet (inexpensive, from auto parts dealer)
Plastic drinking straws, masking tape, scissors, spool of light string/yarn/thread from local stores

Materials volunteers' tasks:

Sharpen ends of dowels to make them easier to pound into the ground.
Assemble the kits.

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Materials to be boxed for 3 volunteers and 18 children:

FOOD CHAIN GAME*

12 green sashes
6 gold sashes
6 red sashes
18 "stomach" bags
1 large bag (1 gal.) popped popcorn**
1 data board with pen and paper

Refill list: Resupply popcorn, and put fresh paper on data board. Make sure there are no holes in the "stomach" bags.

Instructions: For materials volunteers:
    Instructions describing how to construct "stomach" bags and how to make sashes, see OBIS Food Chain Game activity card

Materials: Purchased:
    Fabric for sashes, sandwich bags, masking tape, popped popcorn (at least 1 gallon per kit)
    For data boards: marker pens, butcher or poster paper, IDL or binder clips, duct tape, and heavy cord

Donated/scrounged:
    Heavy cardboard for data boards

Materials volunteers' tasks:
Make "stomach" bags. (See instructions in OBIS Food Chain Game activity card.)
Prepare sashes.
Assemble the kits.

NOTES:

*This activity is best done with 5th graders & above. The quantitative aspects are too difficult for younger students & the activity becomes merely a game of "tag". For 4th graders and younger students we recommend the OBIS Sound-Off activity as an inclement weather, indoor simulation activity.

**We find it easier to purchase popped popcorn at our supermarket, than having to pop and bag gallons of popcorn ourselves.

5/91

Materials to be boxed for 1 volunteer and 6 children:

FOR THE BIRDS

3 ziplock bags with millet
3 ziplock bags with sunflower seeds
3 ziplock bags with bread
2 9-oz. plastic cups
3 pieces cloth
3 bird cut-outs
clay (to make "snake" and hold bird cut-outs)
1 set action cards (#1-6)

Refill list:	Resupply millett, sunflower seeds, and bread. Check contents for completeness and replace missing items.
Materials:	Purchased: Seed (from Audubon birdseed sale, feed store, etc.) Bread, clear plastic 9-oz. cups, ziplock sandwich bags (from local stores) Clay and colored construction paper (from crafts store) Donated/scrounged: Fabric scraps

Materials volunteers' tasks:

Fill seed bags (about 1 cup/bag).
Dry bread (so it won't mold) and put into bags.
Cut fabric in squares (about 8" x 8").
Trace bird models on construction paper and cut out birds. (See OBIS For The Birds Activity Models Equipment Card for cut-out patterns.)
Put clay into bags--about 1/2 cup/ziplock sandwich bag.
Cut apart action cards and use rubber band to bind together the set of 6.
Assemble the kits.

Printing needs: Copy Action Cards on colored cardstock.

5/91

Materials to be boxed for 1 volunteer and 6 children:

HABITATS OF A POND*

For sampling edge & surface:
- 3 observation trays
- 2 dip nets
- 1 plankton net
- 1 long-handled dip net

For sampling open water & bottom:
- 3 observation trays
- 2 long-handled kitchen strainers (and re-use the plankton net and long-handled dip net above)

For the group to share:
- 6 clear plastic cups*
- 1 turkey baster
- 3 Pond Guides (in 1 gallon-size ziplock bag)
- 1 data board with 2 sheets paper and brown, blue, green, red, and black markers

Refill list:
Put fresh paper on data board.
Check nets for holes, repair nets, and check other contents for cleanliness and completeness and replace missing items.

Instructions:
For materials volunteers:
For construction of Plankton Net see Equipment Card in OBIS Habitats of a Pond activity folder.
Instructions for making data boards

Materials:
Purchased:
one metal or plastic embroidery hoop (about 6" diameter), 2 pieces #22 wire (each 10" long), 6 meters nylon fish line for plankton net; 2 metal (5"+ diam.) kitchen strainers, 2 dowels (9/16" diameter) and duct tape for long-handled strainers; 9-oz. soft plastic cups*; turkey baster, markers from local stores
small dip nets, large long-handled dip nets, and Pond Guides (from Delta Education, Inc. or NAAEE)
For data boards: marker pens (brown, blue, green, red, black), butcher or poster paper, IDL or binder clips, duct tape, heavy cord

-over-

Donated/scrounged:

- 1/2-gal. cardboard milk cartons for observation trays
- Old bedsheet
- 3-4 old pill vials (about 2 tablespoons capacity)
- Rubber bands, needle & thread for plankton net
- Heavy cardboard for data boards

Materials volunteers' tasks:

- Make Plankton Net (see instructions on OBIS Habitats of a Pond Equipment Card).
- Make long-handled kitchen strainers by firmly taping dowel to strainer handle.
- Make observation trays.
- Set up data boards with 5 markers (colors listed above) attached to each data board.
- Assemble the kits**.

NOTES:

*Some plastic cups are much better than others for observing critters. We highly recommend the squat, 9-oz. cups made of "ultra-clear shatterproof" plastic. Also, the ones made of soft shatterproof plastic cannot be cracked.

**The Seattle project packages materials for pond activities in used 5-gal. white buckets that grocery stores and delicatessens give away or sell for $1-$2.

5/91

Materials to be boxed for 1 volunteer and 6 children:

HOLD A HILL

4 gallon jugs*
3 meter tape measures
1 slope-measuring device
1 copy Measuring Slope equipment card
9 clear plastic cups with tape labels
    (5 marked #1, 4 marked #2)
3 "water source" containers (all the same)
3 "erosion collector" cans (all the same)
3 trowels
3 pencils
1 data board with pen and paper

*Fill with water at site

Refill list:
    Clean cups if needed.
    Check contents for completeness and replace missing items.

Materials:
    Purchased:
        Meter tape measures and meter sticks from Delta Education, Inc. (or possibly from a local school supplies store)
        Strong cord, line levels, masking tape, garden trowels, from a local hardware store
        Clear plastic cups (about 1 cup/8oz. capacity), a rotary-type can opener (to remove can bottoms) and/or a wedge-shaped can opener (to punch a whole in cans) from a grocery store
        For data boards: marker pens, butcher or poster paper, IDL or binder clips, duct tape, heavy cord

    Donated/scrounged:
        1/2-gallon cardboard milk/juice cartons
        1-gallon plastic jugs with lids
        Cans for "erosion collectors" (All must be the same.)
        Old stubby pencils, sharpened
        Sticks or bent coat-hanger wire (10-12" long) for slope-measuring device
        Heavy cardboard for data boards

Materials volunteers' tasks:
    Using directions in OBIS Hold A Hill activity card, construct slope-measuring devices, "watersource" containers, & "erosion collector" cans.
    Place approximately 2" strip of masking tape on each plastic cup, and with waterproof pen, mark 5 of them #1 and 4 of them #2.
    Set up data boards.
        (See instructions for making data boards.)
    Assemble the kits.

Printing Needs:
    Make copies of Measuring Slope equipment card.

5/91

Materials to be boxed for 1 volunteer and 6 children:

HOPPER CIRCUS

1 "display carton" with plastic wrap & rubber band lid
3 1/2 gal. cartons with flap lid
3 sweepnets*
1 set of 8 Sideshow Cards
3 additional 1/2 gal. cartons with flap lid
1 2-yard string with chalk & stick at ends (to draw racetrack)
3 1/2-cartons (top 1/2 with spout stapled shut)

Refill list: Check contents for completeness and replace missing items.

Instructions: For materials volunteers:
The OBIS Hopper Circus activity card contains instructions for preparing "display cartons", cartons with flaps and compass for drawing racetracks.

Materials: Purchased:
string
chalk

Donated/scrounged:
rubber bands
lots of 1/2-gal. milk cartons
sticks

Materials volunteers' tasks:
Make display cartons, 1/2-cartons for starting races, cartons with flap by cutting milk cartons as shown in OBIS Hopper Circus activity card. Be sure to staple shut ends of cartons.
Cut apart Sideshow Cards and bind the eight cards together with a rubber band.
Tie chalk and stick to opposite ends of string (to make racetrack drawing compass as show on the activity card).

Printing needs:
Copy both sides of the Hopper Circus "Sideshow Cards" onto colored cardstock. (Print cardstock on only one side.)

*NOTE: If you have not already made sweepnets for the OBIS Animals in a Grassland and/or Animal Diversity activity, these need to be made now. See Instructions for making sweepnets.

5/91

Materials to be bagged for 1 volunteer and 6 children:

HOPPER HERDING

6 gal.-size ziplock bags*
2 plastic sheets(3' by 4', 2 mil thick)
1 data board with marker & 3 sheets of paper

Refill list: Check contents for completeness and replace missing items, and mend holes, if necessary.

Instructions: For materials volunteers:
Instructions for making data boards

Materials: Purchased:
Gal.-size ziplock bags (**NOT** freezer bags)*
Plastic sheeting (2 mil thick) from hardware or paint store.
For data boards: marker pens, butcher or poster paper, IDL or binder clips, duct tape, heavy cord

Donated/scrounged:
Heavy cardboard for data boards

Materials volunteers' tasks:
Cut plastic sheeting into 3' x 4' sheets.
Set up data boards, and clip 3 sheets of paper on each.. (See Instructions for making data boards.)
Assemble the kits.

*NOTE: Freezer ziplock bags are made of heavier and more opaque plastic. For activities like this where students need to look at critters through **clear** plastic, be sure to buy **regular** ziplock bags.

5/91

Materials to be boxed for 1 volunteer and 6 children:

HOW MANY ORGANISMS LIVE HERE?*

3	bottom scrapers
6	observation trays
6	nylon stocking feet (for straining)
12	dowels (3 marked for 1/2 meter)
3	Pond Guides (in ziplock bag)
3	copies of Census Card
3	pencils
1	data board with 2 sheets paper and red, green, and black markers
1	meter stick

Refill list: Resupply Census Cards, and put fresh paper on data board. Check contents for completeness and replace missing/damaged items.

Instructions: For materials volunteers:

Aquatic Observation Aids: OBIS How Many Organisms Live Here? Equipment Card tells how to make observation trays. Also see OBIS Bottom Scraper Equipment Card.

Materials: Purchased:

Screws, nuts, and 3 dowels (3/4" to 1" diameter) for bottom scrapers; 12 dowels (5/16" diameter) to mark square sample areas; Pond Guides (from Delta Education, Inc.); pencils, meter sticks

For data boards: waterproof red, green, and black markers, butcher or poster paper, IDL or binder clips, duct tape, heavy cord

Donated/scrounged:

1/2-gallon cardboard milk cartons for observation trays; old nylon stockings/panty hose.

Heavy cardboard for data boards

Materials volunteers' tasks:

Make observation trays and bottom scrapers (see OBIS Equipment Card).

Cut off foot of nylon stockings about 12" up from the toe.

On one of each set of 4 dowels, mark a 1/2 meter length with permanent/waterproof pen.

Set up data boards. For this activity 3 markers of different colors need to be attached to each data board. (See Instructions for making data boards).

Assemble the kits.*

Printing Needs: 3 copies of Census Card for each kit (see OBIS activity insert)

*NOTE: The Seattle project packages materials for pond activities in used 5-gal., white buckets that grocery stores and delicatessens give away or sell for $1-$2.

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Materials to be bagged for 1 volunteer and 6 children:

ISOPODS

- 3 trowels
- 3 ziplock sandwich bags*
- 3 clear plastic cups*
- 3 "bird beaks"
- 1 piece of string with chalk
- 1 data board with marking pen and paper

Refill List: Check contents for completeness and replace missing/damaged items, and put fresh paper on data boards.

Instructions: To go into volunteer-training folder:
    Supplemental instructions for Isopods--stressing the need to check the site ahead of time - And, if necessary, bring some isopods from another site to the activity so that there are enough of **both** kinds of isopods.

Materials: Purchased:
    Trowels (from Delta Education, Inc.)
    Clear plastic 9-oz. cups, ziplock sandwich bags, 8 1/2" x 11" paper and transparent tape for "bird beaks", string, chalk
    For data boards: marker pens, butcher or poster paper, IDL or binder clips, duct tape, heavy cord (See instructions for making data boards.)

Donated/scrounged:
    Heavy cardboard for data boards

Materials volunteers' tasks:
    Insert Supplemental Instructions into Isopod activity for each volunteer's activity folder.
    Make "bird beaks". (See OBIS Isopods activity card for directions.)
    Tie string to chalk and cut string so that it is 12" long (from the chalk to the end).
    Set up data boards.
    Assemble the kits.

Printing needs: Copy Supplemental Instructions for Isopods. (See next page.)

*NOTES: It's easier for kids to keep isopods in ziplock bags as they are hunting and collecting. (This keeps the bugs from escaping.) The ziplock bags get steamed-up though, so the cups tend to be better for observing the isopods.
Some plastic cups are much better than others for observing critters. We highly recommend the squat, 9-oz. cups made of "ultra-clear shatterproof" plastic. Also, the ones made of soft shatterproof plastic cannot be cracked.

SUPPLEMENTAL INSTRUCTION for ISOPODS

PLEASE NOTE: To do this activity, you must have both sow bugs and pill bugs.

Several days before conducting the activity, search your site to make sure that the children will be able to find both sow bugs and pill bugs in the 10-15 minutes allotted for the hunt. Each pair of youngsters needs to be able to find 5 to 10 isopods.

If inadequate numbers of pill bugs or sow bugs exist at your site and you still wish to do the activity, you must find and bring enough of the rare species to provide each pair with at least 3 of the rare bugs. As the students hunt for isopods, inconspicuously get out the extra bugs you brought. Slip a few of the rare species into the ziplock bag of each pair. (For example, you may say, "Here, let me help you, I've got some extra isopods to add to your bag.")

Make sure that you do NOT identify them as pill bugs or sow bugs. **DON'T TELL THE KIDS THAT THERE ARE TWO KINDS OF ISOPODS, BUT BE SURE THAT EACH PAIR ENDS UP WITH BOTH KINDS IN THEIR BAG.**

PILL BUGS seem to be able to tolerate dry periods better than sow bugs. In climates with low humidity, like Denver, they are more abundant and more commonly found.

SOW BUGS seem to require an environment that has a fairly consistent level of moisture/humidity. They are frequently found under rotting logs, wood piles, or rocks surrounded by leaf mulch. They move very fast when the wood or rocks are moved, so are more difficult to collect.

5/91

Materials to be bagged for 1 volunteer and 6 children:

MAPPING A STUDY SITE

1 compass
3 data boards each with marking pen and 1 sheet of paper
3 boxes crayons
7 5"x 8" index cards
12 marker flags (3 sets of 4)*

Refill list: Resupply index cards, and put fresh paper on data boards. Check contents for completeness and replace missing items.

Instructions: For materials volunteers:
  Instructions for making data boards
  Instructions for making marker flags

Materials: Purchased:
  Compasses--We prefer the Silva "Companion Compass" (about $2.50 in 1988), because it is sturdy enough to survive repeated student use, yet modestly priced. (Available from Museum Products, 1-800-395-5400.)
  Boxes of crayons with at least 8 different colors in each, and index cards
  For data boards: marker pens, butcher or poster paper, IDL or binder clips, duct tape, heavy cord
  For marker flags*: survey tape/flagging from a large hardware store or brightly colored fabric/jumbo yarn.

Donated/scrounged:
  For marker flags: heavy-duty wire coathangers
  Heavy cardboard for data boards

Materials volunteers' tasks:
  Set up data boards.
  Make marker flags*.
  Assemble the kits.

*Note: Each kit should have 3 sets of 4 flags. In order to separate one pair of youngsters from those in a neighboring territory, each neighboring pair must have a set of 4 flags that are a different color.

As an alternative to making flags, you may find it easier to get 3 colors of ready-made marker flags from a local contractor or surveyor.

5/91

Materials to be boxed for 1 volunteer and 6 children:

OLD WHITE SHEET TRICK

3 spiders in ziplock bags (for Branching Out #2)*
1 large white sheet or sheet of paper
1 rope or roll of tape (for hanging sheet)
1 large light & extension cord or lantern
3 flashlights (optional)
1 each Action Cards #1, 3, 4, 5, 8 (#2 & 7 have been omitted so sheet can easily be reused)
3 sheets of cellophane (1 red, 1 blue, 1 yellow)
3 different kinds of insect repellent (for Branching Out #3)
(We substituted Branching Out #2 & 3 for Action Cards #2 & 7)

*Catch shortly before doing activity.

Refill list: Resupply fresh spiders.
Check contents for completeness and replace missing items.

Materials: Purchased: Rope or tape, outdoor electric light & extension cord or large lantern, flashlights & batteries from hardware store
Insect repellants (3-4 different kinds) & gallon ziplock bags from grocery store
Large sheet (at least 2' x 3') chart paper (if a bed sheet is not available) & red, blue, & yellow cellophane from art or crafts shop

Donated/scrounged:
Large white sheet or pastel faded sheet (may be purchased from a thrift shop)

Materials volunteers' tasks:
Assemble the kits.

Printing Needs:
Make copies of action cards on colored cardstock.

5/91

Materials to be boxed for 1 volunteer and 6 children:

PIGMENT PUZZLES

For each of 3 pairs:

- 1 "acetone" milk carton with plastic wrap lid
- 1 "vinegar" milk carton
- 2 pennies
- 2 pencils
- 12 strips filter paper
- 1 manila folder
- 1 roll transparent tape

For leader:

- 15 strips filter paper (for use in making puzzles)
- 1 pint acetone*
- 1 "used acetone" container
- 1 pint white vinegar*
- 1 blue marker
- 1 red marker
- 2 "puzzle" boards

Refill list:

Resupply new filter paper strips, replace the paper on the "puzzle" boards, refill acetone and vinegar containers, and discard or recycle used solvents.

Check the cartons to make sure they're clean and **free of holes.** The "acetone" cartons **must** have plastic wrap lids.

Check other contents for completeness and replace missing items.

Materials:

Purchased:

Pencils, filter paper or fine-grained coffee filters, transparent tape, pennies, acetone*, vinegar*, red and blue markers

Donated/scrounged:

Used manila folders, cardboard for "puzzle" boards, jars for "used acetone", 1/2-gal. cardboard milk cartons

Materials volunteers' tasks:

Prepare "acetone" and "vinegar" containers.

Cut and make filter paper strips.

Prepare "puzzle" boards.

(See the OBIS Pigment Puzzles activity card for detailed instructions describing all three of the above tasks.)

Assemble the kits.

*NOTES: Be sure to test your acetone and vinegar **before** buying materials and providing them to volunteers. We have found that some brands of acetone produce a better separation of pigments and produce a pigment strip visibly different from the vinegar strip, while other brands do not.

Materials to be boxed for 1 volunteer and 6 children:

PLANT HUNT/LEAF SUNPRINT*

*SEE NOTE at bottom

1 data board with marking pen and 4 sheets paper
1 Lawn Guide
4 marker flags
3 plastic bags
1 roll transparent tape

Conclude the activity by inviting each child to make a Sunprint* of his/her favorite species' leaf.

1 black envelope with 6 pieces of ozalid paper*—(each in a separate paper folder)
4 extra pieces of ozalid paper in another black envelope
1 wide-mouth, plastic gal. jar with lid and gravel in bottom
1 large grocery bag
1 pencil
1 How to make a Sunprint instructions

Per site:
1 qt.non-sudsy ammonia + 1 plastic cup
#Add about 1/2 cup to each gal. jar before activity begins.

#Expose til yellow paper turns white
#Develop in jar in bag til paper is blue

Refill list: Check contents for completeness and replace missing items.
Put fresh paper on data boards.

For making ozalid paper sunprints:
Resupply 2 black plastic envelopes, (one with 6 sheets ozalid, another with 4 extra sheets), and ammonia.
Rinse out gal. jar and leave lid off to allow it to air dry.

Instructions: To go into activity folder:
How to make an ozalid paper sunprint

To go into box:
How to make an ozalid paper sunprint

For materials volunteers:
Instructions for making data boards
Instructions for making marker flags
Instructions for making black plastic bags (for Sunprints)

*NOTE: Some cities invite each child to make and keep a Sunprint of his/her favorite leaf at the end of the activity. The prints are exciting to do, but increase the costs and preparation time. We suggest that you try out both ozalid paper (developed with ammonia) and Solargraphics paper (developed with water), compare the costs and how well each works in your locale before making your decision and building your prototype kit. Order both kinds of paper from Delta Education, Inc., or get ozalid paper from a local architectual firm. Another alternative with simpler materials is making leaf rubbings -- See "recipe" for that alternative on earlier pages of this section.

-over-

Materials: Purchased:

- Lawn Guides from Delta Education, Inc. or NAAEE
- Transparent tape and gallon-size plastic bags (Note: these do NOT have to be ziplock bags.)
- For data boards: marker pens, butcher or poster paper, IDL or binder clips, duct tape, heavy cord
- For marker flags*: survey tape/flagging-from a large hardware store (150 ft. cost about $2 in 1989) or strips of brightly colored fabric or neon-colored jumbo yarn

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For making ozalid paper sunprints:

- Pencil, construction paper for ozalid paper folders
- 1" wide masking tape (to make black bags)
- Large paper clips (to seal black bags)
- **Non-sudsy** ammonia, measuring cups (for ammonia)
- Ozalid paper from Delta Education, Inc. (Some cities have gotten roll-ends free from local architects.)

Donated/scrounged:

- Heavy wire coat hangers for flags*
- Heavy cardboard for data boards

For making ozalid paper sunprints:

- Gallon-size, wide-mouth plastic jar. Check at school cafeterias or institutional food services for empty catsup or pickle jars. Plastic jars are safer than breakable glass ones.
- Gravel or small landscaping pebbles for plastic jars
- Large brown paper grocery bags
- Black plastic for making bags-We used heavy weight plastic sheets acquired from a landscaping/lawn and garden store.

Materials volunteers' tasks:

- Make marker flags*.
- Set up data boards.
- Assemble the kits.

For making ozalid paper sunprints:

- Make black plastic bags for sunprint paper.
- Fold 9" x 5 1/2" construction paper to make folders for ozalid.
- Stuff ozalid paper in folders and bags. Must be done in darkened room. Use small paper clip to close each construction paper folder and large paper clip to close each black plastic bag.
- Put gravel/pebbles in plastic jars.

Printing needs: Make copies of How to Make a Sunprint.

*NOTE: An alternative is to get ready-made marker flags from a local contractor or surveyor (see marker flag instructions). All four marker flags in a kit must be alike. To keep the groups separated, each group's boundaries must be marked with flags of a **different** color or design.

INSTRUCTIONS FOR MAKING BLACK PLASTIC BAGS

These bags will hold light-sensitive sunprint paper. At the activity sites, the children will use this paper to make shadow prints of different kinds of leaves.

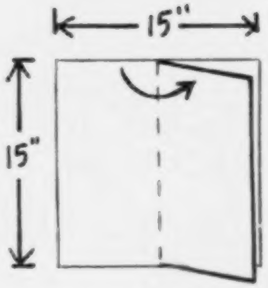
Follow basic instructions. Measurements do not have to be exact -- but bags must be able to hold 7 of the 4 1/2" x 6" construction paper folders.

To make the bags you need:

large sheet of heavy-weight black plastic
1" wide (or wider) masking tape
scissors

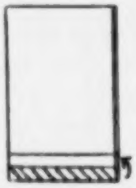
Please make ______ bags by doing the following:

1. Cut a piece of black plastic 15" square.

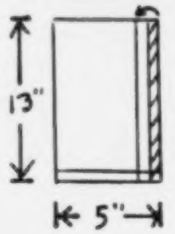


2. Fold the 15" square in half.

3. Fold up bottom edge 1" once, then fold over a second time and tape.



4. Fold over side edge 1" once, then fold over a second time and tape.



5. Your completed product will be a lightproof bag approximately 5" x 13".

6. Please repeat this process to make additional bags.

Thank you for your help. We really appreciate your assistance on these projects.

Please call if you have any questions.

________________________________ Coordinator

________________ Office Phone

________________ Home Phone

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HOW TO MAKE AN OZALID PAPER SUNPRINT

In each box is a 1 gal. wide-mouth plastic jar with gravel/pebbles in the bottom. Before the activity starts, pour about 1/2 cup ammonia in the jar. (One bottle of ammonia and a measuring cup is included in one of the kits for your team of volunteers.) The gravel in the container keeps the sunprints from getting wet and lets them develop in the ammonia fumes. **Place the gal. jar inside the large brown paper grocery bag to make it lightproof.** This protects the prints from light when they are developing in the container.

Each box contains two black plastic bags:

One contains 6 folders. Each folder has one piece of light-sensitive ozalid paper (one for each youngster to make a print).

The other bag contains an extra folder with 4 additional pieces of ozalid paper in case you need extras due to an accident.

*****The paper is extremely light sensitive. Take out only one folder at a time and work with each youngster separately.**

PROCEDURE:

1. After completing Plant Hunt, Action #9, invite the children to make leaf sunprints. Ask each youngster to select his/her favorite leaf.

2. Work with one youngster at a time, having the others watch carefully to learn what to do. If the day is bright and/or sunny, work in the shadow of your body or the shade of a tree. Remove one folder containing ozalid paper, and explain to the children that you will help them use the special paper inside which requires special treatment.

3. As you open the first folder, have the first youngster place her leaf on the yellow side of the ozalid paper. Have her hold the leaf and paper very still until the exposed yellow paper turns white.

   Exposure to direct sunlight will turn the paper white in 2 to 60 seconds. The length of exposure depends on how bright the sunlight is. (A longer exposure may be necessary if the paper is not in direct sunlight or if the sunlight is partially obscured.) If the sun is low in the sky, hold the paper at an angle so that it faces the sun.

4. Remove the lid from the gal. jar. **Quickly** remove the leaf from the ozalid paper, loosely roll the paper, and place it in the gallon jar. Put the lid on the jar. Be sure to keep the gal. jar lightproof inside the brown paper bag.

5. Leave the paper in the capped jar in the paper bag for 30-60 seconds or until the paper turns blue. (More time is needed if the jar is cool.) It will not hurt the prints if they stay in the jar after they have turned blue. Remove the paper and look at the developed print.

NOTE: You may put 2 or 3 pieces of ozalid paper in the jar at once, as long as the papers do not lie flat against each other. The ammonia fumes must be able to circulate over the paper to develop it.

5/91

Materials to be bagged for 1 volunteer and 6 children:

PLANT PATTERNS

- 3 data boards with marker pen & 1 sheet paper
- 12 marker flags (3 sets of 4)*
- 3 empty baggies
- 1 roll transparent tape
- 3 baggies with colored stickers (15 stickers in each of 8 different colors)
- 6 5x7 index cards for "keys"

Refill list:
Resupply index cards and baggies with colored stickers, and put fresh paper on data boards.
Check other contents for completeness and replace missing items.

Instructions:
For materials volunteers:
Instructions for making data boards
Instructions for making marker flags

Materials:
Purchased:
Sandwich-size baggies (ziplocks are NOT necessary)
Transparent tape, index cards and stickers in eight different colors from an office supply store
For data boards: marker pens, butcher or poster paper, IDL or binder clips, duct tape, heavy cord
For marker flags*: survey tape/flagging from a large hardware store or brightly colored fabric/jumbo yarn.

Donated/scrounged:
For marker flags: heavy-duty wire coathangers
Heavy cardboard for data boards

Materials volunteers' tasks:
Set up data boards.
Make marker flags*.
Assemble the kits.

*NOTE: Each kit should have 3 sets of 4 flags. In order to separate one pair of youngsters from those in a neighboring territory, each neighboring pair must have a set of 4 flags that are a different color.

As an alternative to making flags, you may find it easier to get 3 colors of ready-made marker flags from a local contractor or surveyor.

5/91

Materials to be bagged for 1 volunteer and 6 children:

ROOTS AND SHOOTS

1 bucket*
2 large lunch bags
  labeled #1 and #2
4 pieces string
  to tie bags shut
3 trowels
1 set of six action cards
3 large lunch bags

*Fill bucket
with water
at site.

Refill list: Check contents for completeness and replace missing items.

Materials: Purchased:
Trowels from Delta Education, Inc.
Buckets** (approximately 11 qt. capacity or 10" diameter x 10" tall), and string from local store

Donated/scrounged:
Large lunch bags (approximately 7" wide and 12" tall) from grocery store (Bags must be heavy enough to hide plants inside. Thin and/or transparent bags will not work.)

Material volunteers' tasks:
Label lunch bags #1 and #2 with bold black markers, make numbers 2" high. (See illustration in OBIS Roots and Shoots activity card.)
Cut string in approximately 12" lengths (i.e. long enough to tie a bow that will shut the open end of bag).
Cut Action Cards apart and bundle set of #1-#6 with rubber band.
Assemble the kits.

Printing needs: Print action cards on colored cardstock.

**TIME AND MONEY SAVING TIPS: The Seattle project uses 5-gal. white buckets that grocery stores and delicatessens give away or sell for $1-$2. Kits can be assembled by putting all materials in these buckets.

5/91

Materials to be boxed for 1 volunteer and 6 children:

SCRAM OR FREEZE

2 4-yd. lengths of brightly colored yarn
3 gallon-size ziplock bags* marked "SCRAM"
3 gallon-size ziplock bags* marked "FREEZE"
6 clear plastic or paper cups
2 dishpans or boxes with light-colored bottoms--one marked "SCRAM", one marked "FREEZE"
1 1/2-gallon cardboard milk carton with "CRYPTOZOA" printed inside the flap

Refill list: Check contents for completeness and replace missing items.

Materials: Purchased:
Brightly colored yarn, gallon-size ziplock bags (NOT freezer bags*), plastic or paper cups, dishpans, waterproof marker pen from local stores

Donated/scrounged:
1/2-gallon cardboard milk carton
(Boxes with light-colored bottoms may be substituted for dishpans.)

Materials volunteers' tasks:
Label ziplock bags using masking tape & waterproof marker pens.
Cut yarn and milk carton.
Label dishpans or boxes & milk carton using waterproof marker.

*NOTE: Freezer ziplock bags are made of heavier and more opaque plastic. For activities like this where students need to look at critters thru **clear** plastic, be sure to buy **regular** ziplock bags.

5/91

Materials to be boxed for 1 volunteer and 6 children:

SHAKE IT

1 gallon-size ziplock bag*
(for mystery community)
3 3" x 5" index cards (1/pair)
3 "Shake It Containers" (1/pair)*
1 "View Chamber"*

How to set up: Put all contents into the View Chamber. (Contents list can go on outside of View Chamber.)

Refill list: Wipe out bottoms of View Chamber and Shake It Containers to make a clean white surface (for easy observation of tiny bugs).
Check contents for completeness and replace missing items. You may especially need to re-tape bag to "Shake It container" and/or replace bag if it has hole(s).

Materials: Purchased:
Masking tape, gallon-sized ziplock bags*, 3" x 5" index cards, clear plastic* to cover the View Chamber, white contact paper to line the View Chamber, gallon-size bags (NOT ziplock) for the Shake It Containers

Donated/scrounged:
Shirt boxes to make Shake It Containers

Materials volunteers' tasks:
Construct Shake It Containers and View Chambers as described on OBIS Shake It! Equipment Card.

*NOTES: Youngsters need to look at bugs which are sometimes very tiny through the Shake It Container bags and View Chamber cover, so use the clearest smoothest plastic bags and sheets you can find.

5/91

Materials to be boxed for 1 volunteer and 6 children:

SNUG AS A BUG

Part 1:

1 small handful of rice or birdseed
(in baggie)
1 bottle Elmer's glue
1 roll transparent tape
1 spool thread
6 cotton balls

Scraps of paper bag

Part 2:

12 pieces flagging
1 pair scissors
1 pencil
3 gal.-size ziplock bags*

Refill list: Resupply pieces of paper bag, cotton balls, and rice/seed. Check other contents for completeness and replace missing items.

Materials: Purchased:
Bird seed or long-grain rice, Elmer's glue, transparent tape, thread, cotton balls, scissors, pencils, clear ziplock bags* from a local store
Survey tape/flagging from a large hardware store (150 ft. cost about $2 in 1989)

Donated/scrounged:
Large grocery bags, cut into 4 parts

Materials volunteers' tasks:
Cut flagging.
Asemble the kits.

*NOTE: Freezer ziplock bags are made of heavier and more opaque plastic. For activities like this where students need to look at critters thru **clear** plastic, be sure to buy **regular** ziplock bags.

5/91

Materials to be boxed for up to 5 volunteers and 30 children:

SOUND OFF

30 paper bag masks (1/child)
15 pair identical noisemakers (1/child)
2 "predator" cards
1 list of noisemakers and how each works

Refill list:	Check contents for completeness and replace missing/damaged items. Especially check noisemakers to make sure each is **still working** and repair, as needed.
Materials:	Purchased: Noisemakers (See suggestions on attached sheet.) Donated/scrounged: Brown paper grocery bags (for masks) Materials for making noisemakers (See suggestions on attached sheet.)

Materials volunteers' tasks:

Construct noise makers. (See suggested list of noisemakers, attached.)
Cut grocery bags for masks. (See OBIS Sound Off activity card directions.) Check your prototype mask on an average-sized child to make sure they are the appropriate size.
Assemble the kits.

5/91

-over-

NOISEMAKERS FOR SOUND OFF -- for 30 players

Note: For health reasons, we have avoided using items like whistles which must be placed in your mouth.

__2 of each of the following:__

1. 5 bells, (like Christmas jingle bells), strung together (Label "shake".)
2. bicycle bell
3. bicycle horn
4. 2 wooden sticks (approx. 1/2-inch diameter, 12-inch long wooden dowels) (Label "hit together".)
5. New Year's noisemaker spinner
6. 2 sandpaper blocks (Label "rub together".)
7. International Coffee tin and lid with 6 film can lids inside (Label "shake".)
8. 6 oz. fruit juice can with metal pull-top tab inside (reseal lid with tape) (Label "shake".)
9. small paper sack with rice inside (Label "shake".)
10. International Coffee tin with rubber band around it (Label "snap band".)
11. plastic margarine container with lid (Label "tap on lid".)
12. 2 pieces cardboard tubing (i.e. empty paper towel rolls) (Label "hit together".)
13. 35mm. film can with 2 paper clips inside (Label "shake".)
14. alligator or beetle clicker/noisemaker-from a toy shop
15. 2 small pieces of metal pipe (Label "hit together".)

*You may find additional suitable noisemakers in your local toy store, and/or you may choose to make others from readily available materials. Be sure to compare the sounds made by each item in the set to make sure each of the 15 sounds can be distinguished from the others.

5/91

Materials to be boxed for 1 volunteer and 6 children:

SWELL HOMES

- 12 pieces plastic flagging
- 3 plastic bags
- 1 sharp knife
- 3 pair tweezers
- 1 data board with marking pen and paper

Refill list: Check contents for completeness and replace missing items.

Materials: Purchased:

Gallon-size plastic bags, sharp knife, tweezers
Survey tape/flagging from a large hardware store (150 ft. cost about $2 in 1989)
For data boards: marker pens, butcher or poster paper, IDL or binder clips, duct tape, heavy cord

Donated/scrounged:

Heavy cardboard for data boards

Materials volunteers' tasks:

Cut flagging.
Set up data boards.
(See Instructions for making data boards.)
Assemble the kits.

5/91

Materials to be boxed for 1 volunteer and 6 children:

TERRESTRIAL HI-LO HUNT

For 1 light meter*:
- copy of Light Meter Equipment Card
- black construction paper
- transparent tape
- ruler
- light meter scale

For 1 wind meter*:
- copy of Wind Meter Equipment Card
- transparent tape
- ruler
- 11 inch piece of coat hanger wire
- 1/2 plastic soda straw
- 8 paper clips
- 2 3x5" index cards

3 thermometers
3 brown paper towels(to test moisture)
12 action cards (3 copies each card; i.e. 3 light, 3 wind, 3 temperature, and 3 moisture)
3 pencils
12 "Hi" markers* (3 for light, 3 wind, 3 temperature, and 3 moisture)
12 "Lo" markers* (3 for light, 3 wind, 3 temperature, and 3 moisture)

Refill list:	Resupply action cards. Check contents for completeness and replace missing/damaged items.
Instructions:	For kit and materials volunteers: Copies of Wind Meter and Light Meter Equipment Cards (from OBIS Terrestrial Hi-Lo Hunt activity card)
Materials:	Purchased: Light meter scales and thermometers (V-back metal student) from Delta Education, Inc. Black waterproof marker (for labeling Hi & Lo flags) Black construction paper, transparent tape, rulers, straws, paperclips, 3"x5" index cards, brown paper towels

-over-

Donated/scrounged:
- Coat hangers (for wind meters)
- Four different colors of flags from a lawn sprinkler installation company or contractor or surveyor.

Materials volunteers' tasks:
- Make Equipment Card copies and construct light meters and windmeters.*
- Label flags. Be sure to use a different color for the "Hi" and "Lo" of each factor. (e.g. blue flags-Hi moisture and lo moisture; yellow flags-Hi light and lo light, etc.)
- Assemble the kits.

Printing needs:
- Make copies of Hi-Lo Meters Equipment Card and action cards (be sure to get copies of **both** sides) on **white cardstock.**

*NOTE: It is essential for this activity to construct a prototype windmeter and light meter for **each** kit and to test each to make sure it works.

5/91

Materials to be boxed for 1 volunteer and 6 children:

WATER STRIDERS

For each of 3 pairs:
- 1 sweepnet
- 1 dip net
- 1 observation tray
- 2 clear plastic cups
- 2 marker flags

For the group to share:
- 2 yardsticks
- 3 pipe cleaners
- 1 small container of tempera paint
- 1 large bucket

Refill list: Check contents for completeness and replace missing items.

Instructions: For materials volunteers:
- Instructions for making sweepnets
- Instructions for making marker flags

Materials: Purchased:
- Survey tape/flagging from a large hardware store (150 feet cost about $2 in 1989) or strips of brightly colored fabric or neon-colored jumbo yarn - for marker flags
- 9-oz. clear plastic cups, pipe cleaners, orange tempera paint, bucket (approx. 11 qt. capacity or 10" diameter x 10" tall) from local store
- Fine, 3" dip nets from Delta Education, Inc.
- For sweepnets: See instructions for making sweepnets and for putting handles on sweepnets for materials list.

Donated/scrounged:
- Sheer curtains, heavy weight wire coat hangers for sweepnets (Sheer curtains may also be bought from thrift shops.)
- Heavy-weight wire coat hangers for marker flags
- 1/2-gal. cardboard milk cartons for observation trays.
- Yardsticks from building supply stores
- Film canisters for tempera paint (clear plastic ones are best)

Materials volunteers' tasks:
- Make sweepnets.
- Cut observation trays and staple pour-spouts shut (see OBIS Water Striders activity card).
- Make marker flags.
  (See instructions for making marker flags.)
- Mix powder and water to get thick tempera paint and put in film canisters (or purchase liquid pre-mixed paint).

Printing Needs:
- Make copies of Instructions for making sweepnets, and Instructions for making marker flags.

5/91

Materials to be boxed for 1 volunteer and 6 children:

WEB IT

3 spray misters (1/pair)
12 pieces flagging (each piece about 12-15 " long)
1 roll masking tape
3 gal.-size ziplock bags (1/pair)
3 tweezers (1/pair)
8 "broom straws"

Also: 3 sweepnets*

Refill list: Check contents for completeness and replace missing items.

Materials: Purchased:
Spray misters, masking tape, gallon-size ziplock bags, tweezers.
Survey tape/flagging-from a large hardware store (150 ft. cost about $2 in 1989) or strips of brightly colored fabric or ribbon

Donated/scrounged:
Broomstraws from an old, non-plastic broom

Materials volunteers' tasks:
Make sweepnets, if they have not been made for a previous activity.*
Cut flagging.
Count out broomstraws and tie together with plastic twist tie.
Assemble the kits.

*NOTES: If you do not already have sweepnets made, see Instructions for making sweepnets and Instructions for putting handles on insect nets in this section.

5/91

Materials to be boxed for 1 volunteer and 6 children:

WHAT LIVES HERE*

For each of 3 pairs:

- 1 dip net
- 1 observation tray
- 1 clear plastic cup
- 1 Pond Guide (store in one gal.-size ziplock bag to keep them dry)

For the group to share:

- 1 kitchen strainer
- 1 turkey baster
- 1 extra observation tray
- 1 data board with pen & paper

Refill list:
Resupply clear plastic cups when they get cracked and/or too scratched to see through clearly.
Check other contents for completeness and replace missing items. Put fresh paper on data boards.

Materials:
Purchased:
- Pond Guides from NAAEE and 3", fine, dip nets from Delta Education, Inc.
- 9-oz., plastic cups*, strainers, basters, gal.-size ziplock bags from local store
- For data boards: marker pens, butcher or poster paper, IDL or binder clips, duct tape, heavy cord

Donated/scrounged:
- 1/2-gal. cardboard milk cartons for observation trays
- Heavy cardboard for data boards

Materials volunteers' tasks:
Prepare observation trays according to directions on OBIS What Lives Here? Equipment Card. (We use a "plier stapler" to make it easier to staple through the heavy carton.)
Set up data boards.
(See Instructions for making data boards.)
Assemble the kits.

*NOTES: The Seattle project packages materials for pond activities in used 5-gal. white buckets that grocery stores and delicatessens give away or sell for $1-$2.
Some plastic cups are much better than others for observing critters. We higly recommend the squat 9-oz. cups made of "ultra-clear, shatterproof" plastic. Also, the ones made of soft shatterproof plastic cannot be cracked.

5/91

Materials to be boxed for 1 volunteer and 6 children:

WINTERGREEN

For each of 3 pairs:

- 1 thermometer dip stick
- 1 trowel
- 1 packet of photographic proof paper
- 1 small jar of fixing solution powder
- 1 small jar of water (1 cup)
- 1 pair of tweezers
- 1 pencil
- 1 ruler

For the group to share:

- 2 rolls transparent tape
- 1 extra pack of proof paper
- 1 "Making a Light Reading" technique card
- 1 Data Board with chart

Refill list: Resupply packets of proof paper and data board chart. Check fixing solution.
Check other contents for completeness and replace missing items.

Instructions: To go into kit:
OBIS Wintergreen "Making a Light Reading" technique card

For materials volunteers:
Instruction for how to make a dip stick
Instructions for packaging proof paper (See OBIS Wintergreen activity card.)
Instructions for making data boards

Materials: Purchased:
Thermometers, photo proof paper and sodium thiosulfate to make fixing solution, from Delta Education, Inc.
Envelopes, rulers, black construction paper from local store
For data boards: marker pens, butcher or poster paper, IDL or binder clips, duct tape, heavy cord

Donated/scrounged:
Juice cans - 1 metal and one cardboard, yardsticks, small jars
Heavy cardboard for data boards

Materials volunteers' tasks:
Prepare dipsticks.
Prepare envelopes with proof paper.
Label "water" and "fixing solution" jars, and prepare the solution. (See OBIS activity card for detailed instructions describing all three of the above tasks.)
Set up data boards and make chart for each.
Assemble the kits.

5/91

The North American Association for Environmental Education

NAAEE is a network of professionals and students working in the field of environmental education throughout North America and in over 40 countries around the world. For more than 20 years, the Association has promoted environmental education and supported the work of environmental educators.

There are many environmental interest groups, and many organizations dedicated to the improvement of education. NAAEE uniquely combines and integrates both of these perspectives, and takes a cooperative, nonconfrontational approach to promoting education about environmental issues.

The Association is made up of people who have thought seriously—over lifetimes—about how people become literate concerning environmental issues. NAAEE members believe education must go beyond consciousness-raising about these issues. It must prepare people to think together about the difficult decisions they have to make concerning environmental stewardship, and to work together to improve, and try to solve, environmental problems.

NAAEE recognizes the need for a coherent body of information about environmental issues. Its members also recognize that information and analysis are only part of an effective education program. To be truly effective, this body of knowledge must be integrated into all aspects of the curriculum and into all types of educating institutions for the widest array of audiences.

In order to translate theory into reality, and provide tangible support for environmental education and environmental educators, NAAEE engages in a variety of programs and activities. Some examples are the annual conference at varying North American sites, an active publications program, the Environmental Education Training Institute, the VINE (Volunteer-led Investigations of Neighborhood Ecology) Network, the Environmental Issues Forums (EIF) program, and the NAAEE Skills Bank.

NAAEE
NORTH AMERICAN
ASSOCIATION FOR
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EDUCATION

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